ECOLOGY AND ENVIRONMENT, INC.
FIELD INVESTIGATION TEAM
SITE SAFETY PLAN

A. GENERAL INFORMATION

SITE: SCA Services Barton Landfill TDD NO.: F05-8802-099

WSTS/ACCOUNT NO. FIL0599SA

LOCATION: Roxana, IL. (on access road off old Edwardsburg Rd.)

PLAN PREPARED BY: Gary Cobb DATE: 2/17/88

APPROVED BY: Anne M. Stumpf DATE: 4/8/88

OBJECTIVE(S): (including description of work to be performed): A site inspection will be conducted and will include an interview with site representatives and the collection of six surface water samples, six sediment samples, three residential well samples, two municipal well samples, eleven monitoring well samples, and eighteen on-site soil samples plus one background sample.

PROPOSED DATE OF INVESTIGATION: 4/11 - 4/15

BACKGROUND REVIEW: Complete: ✓ Preliminary: ____

DOCUMENTATION/SUMMARY: Overall Hazard: Serious: ____ Moderate: ✓
Low: ____ Unknown: ____

B. SITE/WASTE CHARACTERISTICS

WASTE TYPE(S): Liquid ✓ Solid ✓ Sludge ✓ Gas ____
CHARACTERISTIC(S): Corrosive ✓ Ignitable ✓ Radioactive ____
Volatile ✓ Toxic ✓ Reactive ____ Unknown ____ Other (Name) Carcinogen, Persistent

FACILITY DESCRIPTION: The site is a privately owned landfill that is approximately 75 acres in size and consists of Barton Landfill #1 and #2.

Principal Disposal Method (type and location): Wastes were dumped and compacted with cover material added daily.

Unusual Features (dike integrity, power lines, terrain, etc.): The site is located in rural Madison County. Landfill #1 is about 100 feet west of Cahokia Creek. Landfill #2 is immediately west of landfill #1.

Status (active, inactive, unknown): Landfill #1 has been inactive since about 1984 and Landfill #2 is active and has been in operation since 1984.

History: (worker or non-worker injury; complaints from public; previous agency action): According to IEPA file information, Landfill #1 was found in violation of various operating regulations including inadequate daily and final cover on numerous occasions. Also, nearby residents have filed complaints against the site due to contamination of Chokia Creek. There is no indication of worker or non-worker injury associated with this site.

C. HAZARD EVALUATION

(Use Hazard Evaluation of Chemicals sheets for specific or representative chemicals present):

Hazardous substances possibly present include: asbestos; oily wastes; heavy metals such as Pb, Cu, Ni, As; CN; halogenated/non halogenated solvents such as trichloroethylene, methylene chloride, III-trichloroethane, xylene, acetone, ethyl benzene, cresols, and cresylic acid; and sulfuric acid.

D. SITE SAFETY WORK PLAN

PERIMETER ESTABLISHMENT: Map/Sketch Attached? yes. Site Secured? unknown
Perimeter Identified? yes Zone(s) of Contamination Identified? no

Assume entire site is contaminated.

PERSONAL PROTECTION:

Level of Protection: A ____ B ____ C X D X

Modifications: Since asbestos was disposed in Landfill #1 the site will be entered in Level C if dry dusty conditions exist. Otherwise, the site will be entered in Level D with a possible upgrade to Level C if monitoring equipment indicates an increased hazard. The monitoring wells will be vented in Level C. On site soil samples will be collected in level C, with continuous monitoring. Upgrade to Level C if landfill is inadequately covered.

Surveillance Equipment and Materials: Action levels

OVA: 0-1 ppm above background - level D
>1-5 ppm " " - level C
>5 ppm " " - abandon site, contact RSC.
O_2 meter: <19.5% or >25% O_2 - abandon site, contact RSC
Explosimeter: >30% LEL - abandon site, contact RSC
Monitox (HCN): Any reading >0 abandon site & contact RSC.
Rad mini: if alarm sounds or meter reads ≥1 mRem/hr - abandon site, contact RSC

DECONTAMINATION PROCEDURES: All personnel and potentially contaminated equipment will be decontaminated with a solution of Alconox and distilled water and rinsed with distilled water. Wash & rinse water will be left on site with prior permission from site owners.

Special Equipment, Facilities, or Procedures: The monitoring wells will be vented in Level C with Robert Shaw Escape Masks present, in case of emergency.

SITE ENTRY PROCEDURES: Obtain prior permission, locate all exits, stay upwind of contamination as much as possible, and observe the "Buddy System" at all times. Obey facility safety regulations as a minimum. Monitor for dry & dusty conditions.

Team Member	Responsibility
Gary Cobb	Team Leader
Matt Arndd	Site Safety Officer
Catherine Neswick	Sampler
Bob Kurzeja	Team Member
Rob Hinsfaer	Team Member
Melanie Desterenko	Team Member

WORK LIMITATIONS (Time of day, etc.): Work will be performed during daylight hours only. Personnel will be monitored for heat/cold stress and the "buddy system" will be maintained at all times

INVESTIGATION-DERIVED MATERIAL DISPOSAL: All investigation-derived material will be decontaminated if possible, double-bagged, marked "Potentially Hazardous Wastes", and left on-site with prior permission from site owners.

E. EMERGENCY INFORMATION

LOCAL RESOURCES

Ambulance 656-2120 or 911 Edwardsville Ambulance
Hospital Emergency Room 656-6730 Edgewood-Edwardsville Hospital
Poison Control Center 1-800-222-1222 state wide
Police 692-1433 Madison County Sheriff's Office
Fire Department 656-2121 Edwardsville Fire Dept.
Airport 1-314-426-8000 Lambert-St. Louis International Airport
Explosives Unit 911 Police or Fire Dept.
EPA Contact Don Josif (312) 886-0393

SITE RESOURCES

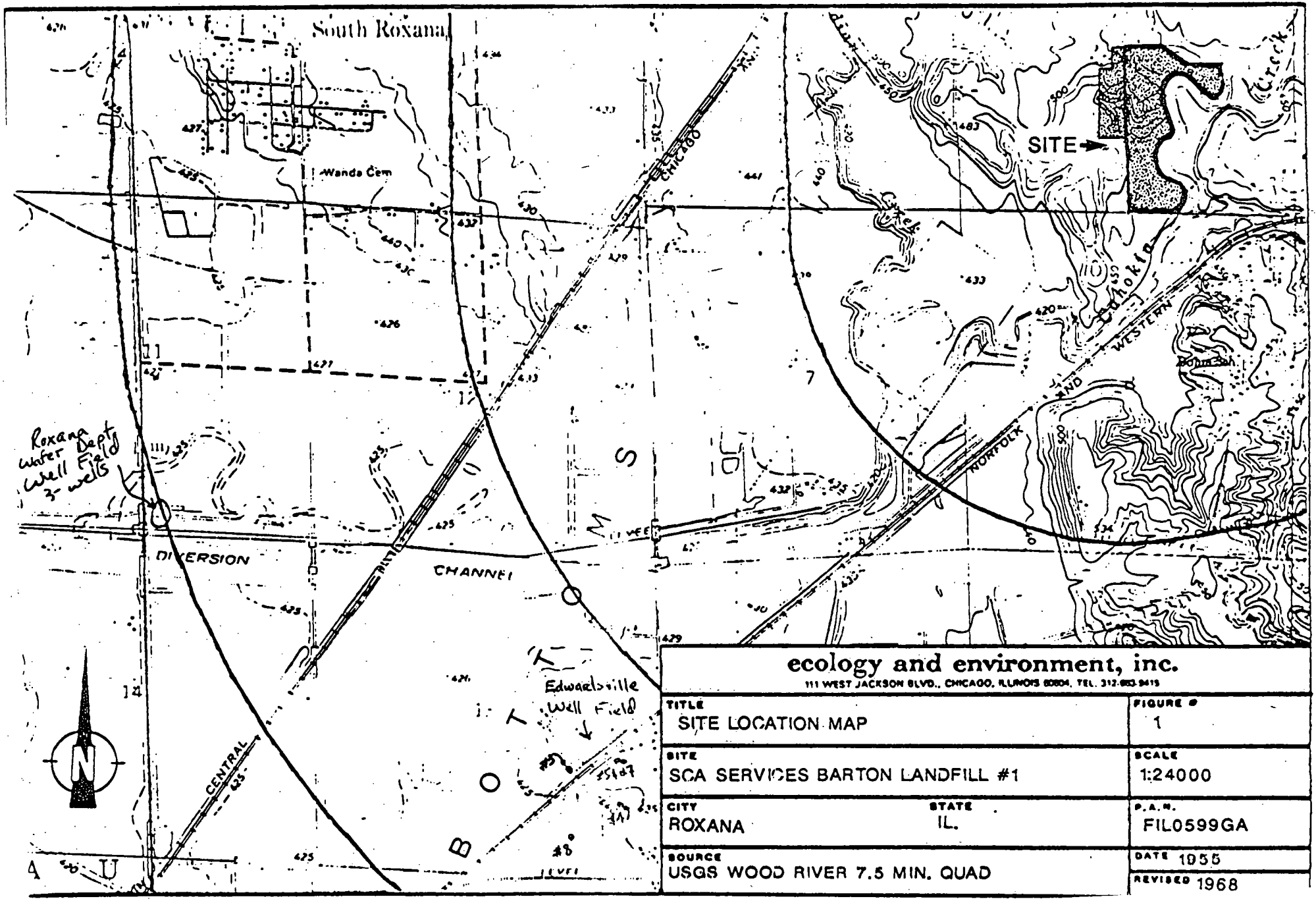
Water Supply To be supplied by FIT.
Telephone Determined prior to site entry
Radio N/A
Other N/A

EMERGENCY CONTACTS

1. Dr. Raymond Harbison (University of Arkansas) .. (501) 661-5766 or 661-5767
   MED-TOX.....(501) 370-8263 (24 hours)
2. Manager of Health and Safety - Paul Moss.....(312) 541-6635 (Home)
3. Regional Project Manager - Rene Van Someren.....(312) 763-7335
4. Chicago Office.....(312) 663-9415
5. E & E 24 Hour Call Line.....(716) 631-9530
   (24 Hours; Call Forwarding)
6. Regional Health Maintenance Program Contact .....PMI - (312) 832-8820
   8:00 a.m. - 5:00 p.m.
7. Paul Jonmaire.....(716) 631-9530 (Response
   Corporate Safety Director Center)
   (716) 632-4491 (Office)
8. Ecology and Environment, Inc. ZPMO.....(703) 522-6065

F. EMERGENCY ROUTES
(Give road or other directions; attach map)

Hospital: Exit site north to Wanda Rd.. East on Wanda Rd. to North University Dr. South on North University Dr. to Tower Lake Rd.. East on Tower Lake Rd. to St. Louis Rd.. North on St. Louis Rd. to University Dr.. East on University Dr. to hospital. Hospital route will be driven prior to site work.



ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

TITLE: SITE LOCATION MAP	FIGURE #: 1
SITE: SCA SERVICES BARTON LANDFILL #1	SCALE: 1:24000
CITY: ROXANA STATE: IL.	P.A.N.: FIL0599GA
SOURCE: USGS WOOD RIVER 7.5 MIN. QUAD	DATE: 1955 REVISED 1968

ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

TITLE: HOSPITAL ROUTE MAP	FIGURE #: 2
SITE: SCA SERVICES BARTON LANDFILL	SCALE: 1:24000
CITY: ROXANA — STATE: IL	TDD #:
SOURCE: EDWARDSVILLE 7.5 MIN. QUAD	DATE:
	REVISED:

OLD BARTON
BARTON I
BARTON/NEWTON

THE SIGMA-ALDRICH LIBRARY OF CHEMICAL SAFETY DATA

Explanation of Codes

PROCEDURES FOR SPILLS OR LEAKS

1 Absorb on sand or vermiculite and place in closed container for disposal.
2 Cover with dry lime, sand, or soda ash. Place in covered containers using nonsparking tools and transport outdoors.
3 Shut off all sources of ignition.
4 Evacuate area.
5 Cover with an activated carbon adsorbent, take up and place in closed container. Transport outdoors.
6 Ventilate area and wash spill site after material pickup is complete.
7 Sweep up, place in a bag and hold for waste disposal.
8 Avoid raising dust.
9 Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.
10 Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves.
11 Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal.
12 Carefully sweep up and remove.
13 Flush spill area with copious amounts of water.
14 Mix with solid sodium bicarbonate.
15 Place in appropriate container.
16 Wear protective equipment.
17 Wash spill site with soap solution.
18 Please contact the Technical Services Department. Be sure to mention the name and catalog number of the material.

FIRE-EXTINGUISHING MEDIA

1 Carbon dioxide.
2 Dry chemical powder.
3 Water spray.
4 Alcohol or polymer foam.
5 Class D fire-extinguishing material only.
6 Water may be effective for cooling, but may not effect extinguishment.
7 Carbon dioxide, dry chemical powder, alcohol or polymer foam.
8 Foam and water spray are effective but may cause frothing.
9 Do not use dry chemical powder extinguisher on this material.
10 Do not use carbon dioxide extinguisher on this material.
11 Noncombustible.
12 Do not use water.
13 Use extinguishing media appropriate to surrounding fire conditio

Z14,866-0

Sigma-Aldrich Corporation, P.O. Box 355, Milwaukee, Wisconsin 53201 USA
(Sigma: 314-771-5765; Aldrich: 414-273-3850)

WASTE-DISPOSAL METHODS

The disposa[illegible]s outlined below are intended only as guides. We [illegible]not assume responsibility for their use. Careful consideration must be given to the chemical and physical properties of the substance. In addition, local laws and regulations may preclude the use of these methods which are primarily designed for small quantities. Observe all federal, state, and local laws.

The disposal of some chemicals may require deactivation or modification of the material by chemical means. Chemical waste-disposal reactions must be handled with the same care and consideration used with synthetic procedures. Appropriate consideration must be given to reaction conditions, *i.e.*, stoichiometry, order and rate of addition, heat of reaction, evolution of gaseous products, pH, efficiency of stirring, rate of reaction, atmospheric sensitivity, etc.

Chemical waste-disposal reactions should be carried out in a chemical fume hood and in appropriate laboratory glassware. Because these reactions are often vigorous, protective safety equipment such as safety goggles, respirator, gloves, face and/or safety shield and other protective equipment must be used.

Initial reactions in a disposal sequence should be carried out on a small scale (5-10g). The reactant concentrations should not exceed 10% of the reaction volume and the final reaction volume should not exceed 50% of the working capacity of the reaction vessel, regardless of the reaction scale. Larger quantities of the material should be handled in several small-size reactions. To ensure completion of reaction, the waste disposal procedure should be run for at least an additional 4 to 8 hours after all materials have been mixed.

All reactions should be run by technically qualified persons familiar with the potential hazards of the chemical reactions.

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

The material should be ignited in the presence of sodium carbonate and slaked lime (calcium hydroxide). The substance should be mixed with vermiculite and then with the dry caustics, wrapped in paper and burned in a chemical incinerator equipped with an afterburner and scrubber.

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber.

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

To a solution of the product in water, add an excess of dilute sulfuric acid. Let stand overnight. Remove any insolubles and bury in a landfill site approved for hazardous-waste disposal.

Cautiously dissolve the material in water. Neutralize immediately with sodium carbonate or, if the material does not dissolve completely, add a little hydrochloric acid followed by sodium carbonate. Add calcium chloride in excess of the amount needed to precipitate the fluoride and/or carbonate. Separate the insolu[illegible] bury in a landfill site approved for hazardous-waste disposal.

G Under an inert atmosphere, cautiously add the material to dry butanol in an appropriate solvent. The chemical reaction may be vigorous and/or exothermic. Provisions must be made for venting of large volumes of highly flammable hydrogen and/or hydrocarbon gases. Neutralize the solution with aqueous acid. Filter off any solid residues for disposal as hazardous waste. Burn the liquid portion in a chemical incinerator equipped with an afterburner and scrubber.

H Neutralize the solution and add filtering agent (10g per 100ml). Evaporate the liquid and bag the residual solid for burial in a landfill site approved for hazardous-waste disposal.

I Dissolve the solid in (or dilute the solution with) a large volume of water. Carefully add a dilute solution of acetic acid or acetone to the mixture in a well ventilated area. Provisions should be made to vent safely the hydrogen gas given off during the decomposition. Check acidity of the solution and adjust to pH 1 if necessary. Let stand overnight. Neutralize the solution (pH 7). Evaporate the solution and bury the residue in a landfill site approved for hazardous-waste disposal.

J Cautiously acidify a 3% solution or a suspension of the material to pH 2 with sulfuric acid. Gradually add a 50% excess of aqueous sodium bisulfite with stirring at room temperature. An increase in temperature indicates that a reaction is taking place. If no reaction is observed on the addition of 10% of the sodium bisulfite solution, initiate it by cautiously adding more acid. If manganese, chromium, or molybdenum is present, adjust the pH of the solution to 7 and treat with sulfide to precipitate for burial as hazardous waste. Destroy excess sulfide, neutralize and flush solution down the drain.

K Please contact the Technical Services Department. Be sure to mention name, catalog number and quantity of the material.

L The material should be dissolved in 1) water; 2) acid solution or 3) oxidized to a water-soluble state. Precipitate the material as the sulfide, adjusting the pH of the solution to 7 to complete precipitation. Filter the insolubles and dispose of them in a hazardous-waste site. Destroy any excess sulfide with sodium hypochlorite. Neutralize the solution before flushing down the drain.

M A slurry of the arenediazonium salt with water can be disposed of by adding it gradually to a stirred solution of 5-10% excess 2-naphthol in 3% aqueous sodium hydroxide at 0-20°C. After 12 hours, the resulting azo dye is filtered and either incinerated or buried in a landfill site approved for hazardous-waste disposal. Neutralize the remaining solution before disposal.

N For small quantities: cautiously add to a large stirred excess of water. Adust the pH to neutral, separate any insoluble solids or liquids and package them for hazardous-waste disposal. Flush the aqueous solution down the drain with plenty of [illegible] The hydrolysis and neutralization reac[illegible]may generate heat and fumes which can be controlled by the rate of addition.

O Bury in a landfill site approved for the disposal of chemical and hazardous waste.

P Material in the elemental state should be recovered for reuse or recycling.

Q Cautiously make a 5% solution of the material in water or dilute acid. There may be a vigorous, exothermic reaction and fumes may be generated due to the hydrolysis of the material. Control any reaction by cooling and by the rate of addition of the material. Gradually add dilute ammonium hydroxide to pH 10. Filter off any precipitate for disposal in a chemical landfill. If there is no precipitation, gradually adjust the pH from 10 to 6, stopping when precipitation occurs.

R Catalysts and expensive metals should be recovered for reuse or recycling.

S Treat a dilute basic solution (pH 10-11) of the material with a 50% excess of commercial laundry bleach. Control the temperature by the addition rate of bleach and adjust pH if necessary. Let stand overnight. Cautiously adjust solution to pH 7. Vigorous evolution of gas may occur. Filter any solids for burial in a chemical landfill. Precipitate any heavy metals by addition of sulfide and isolate for burial. Additional equivalents of hypochlorite may be needed if the metal can be oxidized to a higher valence state. For metal carbonyls, the reaction should be carried out under nitrogen.

T Cautiously make a 5% solution of the product in water; vent because of possible vigorous evolution of flammable hydrogen gas. Acidify the solution to pH 1 by adding 1*M* sulfuric acid dropwise. Acidification will cause vigorous evolution of hydrogen gas. Allow the solution to stand overnight. Evaporate the solution to dryness and bury the residue in a landfill site approved for hazardous-waste disposal.

U Take the material (or a solution) and make a 5% solution in tetrahydrofuran. Cautiously add the solution dropwise to an ice-cooled, stirred basic solution of commercial bleach. Oxidation may release flammable hydrocarbon gases which must be vented. Let stand overnight. Adjust the pH to 7 and destroy excess hypochlorite with sodium bisulfite before disposal of the solution.

V Under an inert atmosphere cautiously add dry butanol or a mixture of dry butanol in an appropriate solvent, to a solution of the material in tetrahydrofuran. The chemical reaction may be vigorous and/or exothermic. Provisions must be made for the venting of a large volume of flammable hydrogen gas. When gas evolution ceases, cautiously add a basic hypochlorite solution dropwise to the reaction solution. Let stand overnight. Neutralize the solution and treat with sodium bisulfite to destroy any excess hypochlorite. Filter any solids for burial in a landfill site approved for hazardous-waste disposal.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Asbestos Date 2/17/88

DOT Classification _____ Job Number FIL0599SA

CAS Number 1332-21-4

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index Hazardline (Chris(vol.III))
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual SAX Aldrich
RTECS other: GA Tech Manual:Supervision of asbestos abatement

CHEMICAL PROPERTIES:(Synonyms:Chrysotile, Amosite,Crocidolite,Tremolite)
Chemical Formula Varies MW N/A Ionization Potential N/A
Physical State Solid Boiling Point N/A Freezing Point N/A
Flash Point N/A Flammable Limits N/A Vapor Pressure N/A
Specific Gravity/Density varies Odor/Odor Threshold N/A
Solubility-water: Non-soluble Solubility-other: N/A
Incompatabilities & Reactivity: None

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 0.2-2.0Fibers/CC PEL (OSHA)0.2Fibers/CC
STEL N/A Ceiling Limits N/A IDLH N/A
Toxicity Data: (Indicate duration of study)
Human; IHL TDLo:2.8fibers/cc Dermal N/A Oral _____
Rat/Mouse;IHL TDLo:100mg/kg:ETA Dermal N/A Oral _____
Aquatic: _____ Other: _____
Carcinogen Known human Mutagen N/A Reproductive Toxin N/A
ute(s) of exposure - (circle all that apply): (Inhalation) (Ingestion)
ermal Contact Eye(ocular) Dermal Absorption Other _____

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators:HEPA filters with airpurifying up tooil fibers/cc;air supplied
Protective Clothing:Full body disposable covering, inc.hood,gloves & boots
Special Equipment:If not in full face piece respirator wear eye protection

DISPOSAL,FIRE and SPILLS:(Use numbered codes;see attached sheets for explanation.)
Disposal approved landfill Fire N/A Leaks&Spills vacume
Decomposition Products: None

FIRST AID:
ING: None
IHL: None
Eye/Skin: N/A

SYMPTOMS:
acute(immediate) exposure effects: None

chronic(long term) exposure effects: Asbestosis, lung cancer & possible GI tract cancer, mesothelioma and carcinogenic properties greatly potentiated by cigarette smoke.

eproductive effects: N/A

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Arsenic Date 2/17/88

DOT Classification _____ Job Number FIL0595A

CAS Number 7440-38-2

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index Hazardline (Chris(vol.III))
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual (SAX) (Aldrich)
(RTECS) other: Casarett &Doull's Toxicology,Carcinogen Report-NTP83-01;

CHEMICAL PROPERTIES: (Synonyms:Arsenicals,metallic arsenic,colloidal A:
Chemical Formula As MW 74.9 Ionization Potential N/A
Physical State black solid Boiling Point sublim Freezing Point
Flash Point N/A Flammable Limits N/A Vapor Pressure 5.7
Specific Gravity/Density N/A Odor/Odor Threshold odorless

Solubility-water: Insoluble Solubility-other: nitric acid
Incompatabilities & Reactivity: halogens,oxidizers,zinc,bromine azide,a

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 0.2 mg/m³ PEL (OSHA) 10 ug/m³
STEL none Ceiling Limits 2ug/m³/15min IDLH carcinogen
Toxicity Data: (Indicate duration of study)
Human; IHL _____ Dermal _____ Oral Tdlo 7857mg/kg/
Rat/Mouse; IHL _____ Dermal _____ Oral Tdlo 605ug/kg
Aquatic: none establ. Other: _____
Carcinogen human-pos Mutagen exper. Reproductive Toxin exper.
Route(s) of exposure - (circle all that apply): (Inhalation) (Ingestion)
Dermal Contact (Eye(ocular)) Dermal Absorption Other _____

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: <100ug/m³ use APR, >100ug/m³ use SCBA
Protective Clothing: rec.-viton,butyl,vinyl,nitrile,neoprene.
Special Equipment:

DISPOSAL,FIRE and SPILLS: (Use numbered codes;see attached sheets for explanation.)
Disposal P Fire 11,13 Leaks&Spills 4,6,7,8,9
Decomposition Products: toxic fumes of arsenic oxides.

FIRST AID:
ING: Get medical attention immediately.
IHL: Remove to fresh air,artificial resp. if needed,medical attent.
Eye/Skin: Flush/rinse with large amounts of water for at least 15 min.

SYMPTOMS:
acute(immediate) exposure effects: ING-stomach disturbances,burning/dry oral cavities,vomiting,severe fluid loss,muscle spasms,coma. IHL-cough, chest pain,headache,weakness,perforation of nasal septum,irritation of respiratory tract.possible skin irritation.

chronic(long term) exposure effects: IHL-industrial chronic poisoning: fatigue,weakness,loss of appetite,nausea,diarrhea,hoarseness,upper resp. mucosa irritation,advanced stages see nerve problems in extremities. Liver damage,lung cancer,skin cancer also may result.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Chromium (metal) Date 2/17/88

DOT Classification _____ Job Number FIL0599SA

CAS Number 7440-47-3

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index (Hazardline) Chris(vol.III)
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual (SAX) (Aldrich)
RTECS other: Sittig

CHEMICAL PROPERTIES: (Synonyms: Chromiun metal, insoluble salts)
Chemical Formula Cr MW 52 Ionization Potential N/A
Physical State variable Boiling Point 4842°F Freezing Point 3339°F
Flash Point variable Flammable Limits LEL-.23% Vapor Pressure variable
Specific Gravity/Density 7.2@82°F Odor/Odor Threshold none

Solubility-water: Insoluble Solubility-other: _____
Incompatabilities & Reactivity: strong oxiders, powdered metal is explosive

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 0.5 mg/m³ PEL (OSHA) 1.0 mg/m³
STEL none est. Ceiling Limits none est. IDLH 500 mg/m³
Toxicity Data: (Indicate duration of study)
Human; IHL _____ Dermal _____ Oral _____
Rat/Mouse; IHL _____ Dermal _____ Oral _____
Aquatic: _____ Other: _____
Carcinogen N/A Mutagen N/A Reproductive Toxin N/A
Route(s) of exposure - (circle all that apply): (Inhalation) (Ingestion)
(Dermal Contact) (Eye(ocular)) Dermal Absorption Other _____

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: 5 mg/m³ - SCBA
Protective Clothing: Prevent skin/eye contact.
Special Equipment: Wear impervious clothing.

DISPOSAL, FIRE and SPILLS: (Use numbered codes; see attached sheets for explanation.)
Disposal P,O Fire 13 Leaks&Spills 3,4,6,7,8,9
Decomposition Products: _____

FIRST AID:
ING: Large amounts of water, induce vomiting, medical attent. immed.
IHL: Move to fresh air, artificial resp. if necessary, medical atten.
Eye/Skin: Irrigate/rinse with large amounts of water. Wash skin thoroughly with soap & water.

SYMPTOMS:
acute(immediate) exposure effects: Contact dermatitis, ulceration of skin & nasal mucosa, irritation of eyes & mucous membranes.

chronic(long term) exposure effects: Not often encountered with the 3+ state since chromium compounds in this state are of a lower order toxicity.

reproductive effects: None specified for humans.

TOXICITY DATA: 3 CODEN:
DOT: Flammable Liquid, Label: Flammable Liquid FEREAC 41,57018,76. Reported in EPA TSCA Inventory, 1980.
Fire Hazard: Very dangerous, when exposed to heat or flame.
To Fight Fire: Alcohol foam.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

COLTSFOOT

NIOSH #: GJ 9880000

It is herb of the tribe Senecione and from family Compositae (GANNA2 67,125,76)

SYNS:
KAN-TO-KA (JAPANESE) TUSSILAGO FARFARA L

TOXICITY DATA: 3 CODEN:
orl-rat TDLo:4800 gm/kg/77W-C:CARC GANNA2 67,125,76

THR: An exper CARC to rats via orl.

COMPOUND 69/183

CAS RN: 27114110 NIOSH #: UQ 4810000
mf: $C_{22}H_{25}FN_2O \cdot 2ClH$; mw: 425.41

SYN: 3-(GAMMA-(P-FLUOROBENZOYL)PROPYL)-2,3,4,4a,5,6-HEXAHYDRO-1(H)-PYRAZINO(1,2A)QUINOLINE HCl

TOXICITY DATA: 3-2 CODEN:
orl-rat LD50:800 mg/kg DRFUD4 4,185,79
ipr-rat LD50:161 mg/kg ARZNAD 28,1641,78
orl-mus LD50:1 gm/kg DRFUD4 4,185,79
ipr-mus LD50:300 mg/kg JMCMAR 13,516,70
ivn-mus LD50:95 mg/kg ARZNAD 28,1641,78

THR: HIGH ipr, ivn, orl.
Disaster Hazard: When heated to decomp it emits very tox fumes of F^-, NO_x and HCl.

CONIUM MACULATUM

NIOSH #: GL 1223600

Colorless, oily liquid with mousy odor; bp: 166.5°, fp: −2.5°, d: 0.844-0.848 @ 20°/4°. Lupine Plant whose toxic agent is Coniine, fed as green or dried plant (CTOXAO 12,49,78)

TOXICITY DATA: 3 CODEN:
orl-cat TDLo:29 gm/kg/(45-75D) preg):TER CTOXAO 12,49,78

THR: Tox principle of poison hemlock. Ingestion causes weakness, drowsiness, nausea, vomiting, labored respiration, paralysis, asphyxia, death from paralysis of the nervous system. In small doses it is a sedative. Poisoning is treated by evacuating the stomach and administering tannic acid.
Fire Hazard: Slight, when heated.

COPPER

CAS RN: 7440508 NIOSH #: GL 5325000
Af: Cu; Aw: 63.54

A metal with a distinct reddish color. mp: 1083°, bp: 2324°, d: 8.92, vap. press: 1 mm @ 1628°.

SYNS:
BRONZE POWDER COPPER BRONZE
C.I. 77400 GOLD BRONZE

TOXICITY DATA: 3 CODEN:
orl-rat TDLo:152 mg/kg (22W pre) GISAAA 45(3),8,80
orl-rat TDLo:1520 ug/kg (22W pre) GISAAA 45(3),8,80
orl-rat TDLo:1210 ug/kg (35W pre) GISAAA 42(8),30,77
ipl-rat TDLo:100 mg/kg TFX:ETA AIHAAP 41,836,80
orl-hmn TDLo:120 ug/kg:GIT PHRPA6 73,910,58

TLV: Air: 0.2 mg/m3 (fume) DTLVS* 4,104,80; air: 1 mg/m3 (dust mist) DTLVS* 4,104,80. *Toxicology Review:* TRBMAV 33(1),85,75; QURBAW 7(1),75,74; JAVMA4 164(3),277,74; IJMDAI 10(4),416,74; KOTTAM 11(11),1300,75; FOREAE 7,313,42; MIBUBI 9(4),321,75; PEXTAR 12,102,69; 85DHAX Cu,41,74; AMTODM 3,209,77. "NIOSH Manual of Analytical Methods" VOL 5 173=. Reported in EPA TSCA Inventory, 1980.
THR: HIGH hmn via orl. See copper compounds.
Fire and Explosion Hazard: Reacts violently with C_2H_2, NH_4NO_3, bromates, chlorates, iodates, Cl_2, ClF_3, ($Cl_2 + OF_2$), ethylene oxide, F_2, H_2O_2, hydrazine mononitrate, hydrazoic acid, H_2S, $Pb(N_3)_2$, K_2O_2, NaN_3, Na_2O_2.
Incomp: 1-bromo-2-propyne.
For further information see Vol. 1, No. 5 of *DPIM Report.*

COPPER ACETATE

CAS RN: 142712 NIOSH #: AG 3480000
mf: $C_4H_6O_4 \cdot Cu$; mw: 181.64

Greenish blue powd or small crystals.

SYNS:
ACETIC ACID, CUPRIC SALT CRYSTALS OF VENUS
COPPER(2+) ACETATE CUPRIC ACETATE
COPPER(II) ACETATE CUPRIC DIACETATE
COPPER DIACETATE NEUTRAL VERDIGRIS
COPPER(2+) DIACETATE OCTAN MEDNATY (CZECH)
CRYSTALLIZED VERDIGRIS

TOXICITY DATA: 2 CODEN:
scu-rat TDLo:40 mg/kg (7-10D preg) CRSBAW 166,1237,72
orl-rat LD50:595 mg/kg MarJV# 29MAR77

Reported in EPA TSCA Inventory, 1980.
THR: MOD orl.
Disaster Hazard: When heated to decomp it emits acrid smoke and irr fumes.

COPPER(II) ACETYLIDE

mf: C_2Cu; mw: 87.56

Sensitive to impact, friction and heat.

SAX, 5th Ed.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Hydrogen Cyanide Date 2/17/88

DOT Classification _____ Job Number FIL0595A

CAS Number 74-90-8

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index (Hazardline) (Chris(vol.III))
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual SAX Aldrich
RTECS other: Cassarett & Doull's Toxicology,Sittig.

CHEMICAL PROPERTIES:(Synonyms:Hydrocyanic acid,Prussic acid,formonitrile)
Chemical Formula HCN MW 27 Ionization Potential 13.91
Physical State Gas,liquid Boiling Point 79°F Freezing Point 7°F
Flash Point 0°F Flammable Limits 5.6-40% Vapor Pressure 0.95
Specific Gravity/Density 0.689@20°C Odor/Odor Threshold 1ppm*
Solubility-water: Miscible Solubility-other: Miscible-alcohol,ether
Incompatabilities & Reactivity: Bases,caustics,O_2,Peroxides,plastic,acids
*Odor not adequate warning property since effects occur rapidly.
TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 10ppm(skin) PEL (OSHA) 10ppm(skin)
STEL None est. Ceiling Limits 5mg/m³/10min.(NIOSH) IDLH 50ppm
Toxicity Data: (Indicate duration of study)
Human; IHLLclo 200mg/m³/10min Dermal _____ Oral LDlo 570ug/kg
Rat/Mouse; IHLLc50 484ppm/4H Dermal _____ Oral LDlo 10mg/kg
Aquatic: N/A Other: _____
Carcinogen N/A Mutagen N/A Reproductive Toxin N/A
Route(s) of exposure - (circle all that apply): (Inhalation) (Ingestion)
(Dermal Contact) (Eye(ocular)) (Dermal Absorption) Other Quicly abesorbed thru skin.

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: Supplied air with escape SCBA, SCBA with full face piece.
Protective Clothing: Avoid skin contact.
Special Equipment: None

DISPOSAL,FIRE and SPILLS:(Use numbered codes;see attached sheets for explanation.)
Disposal C Fire 7 Leaks&Spills _____
Decomposition Products: Toxic fumes of CN

FIRST AID:
ING: Give large quantities of milk or water,induce vomiting,medical atten.
IHL:Move to fresh air, give artifical resp. if necessary,medical atten.
Eye/Skin: Irrigate/rinse with large amounts of water for at least 15 min.

SYMPTOMS:
acute(immediate) exposure effects:Chemicial asphyxiant,rapid hypotension, convulsions,collapse,unconsciousness,coma,decreased respiration.Lower doses cause vomiting,headache,weakness,nausea.

chronic(long term) exposure effects: Little data avail.Reported symptoms: dizziness,weakness,lung congestion,hoarseness,conjunctivitis,loss of appetite,weight loss,dermatitis

reproductive effects: None specified for humans.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Lead Date 2/17/88

DOT Classification _____ Job Number FIL0599SA

CAS Number 7439-92-1

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index (Hazardline) (Chris(vol.III))
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual (SAX) (Aldrich)
(RTECS) other: Sittig

CHEMICAL PROPERTIES: (Synonyms: White lead, plumbum)
Chemical Formula Pb MW 207 Ionization Potential N/A
Physical State Variable Boiling Point 3164°F Freezing Point _____
Flash Point Incombust. Flammable Limits Incombus Vapor Pressure variable
Specific Gravity/Density 11.3 @61°FOdor/ Odor Threshold None
Solubility-water: Insoluble Solubility-other: _____
Incompatabilities & Reactivity: Strong oxidizers, perioxides, active metals

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) .15 mg/m³ PEL (OSHA) 50ug/m³
STEL None est. Ceiling Limits None est. IDLH Variable
Toxicity Data: (Indicate duration of study)
Human; IHL _____ Dermal _____ Oral Td10 450mg/kg/6Y
Rat/Mouse; IHL _____ Dermal _____ Oral Tdlo 790mg/kg
Aquatic: Unknown Other: Toxicity varies with lead cpds.
Carcinogen Indef. Mutagen Indef Reproductive Toxin exp. teratogen
Route(s) of exposure - (circle all that apply): (Inhalation) (Ingestion)
(Dermal Contact) (Eye/ocular) (Dermal Absorption) Other _____

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: 5mg/m3 high efficiency particulate respirator, other concentrations - SCBA.
Protective Clothing: Avoid skin and eye contact
Special Equipment: None

DISPOSAL, FIRE and SPILLS: (Use numbered codes; see attached sheets for explanation.)
Disposal P Fire 13 Leaks&Spills 7,8,10
Decomposition Products: Toxic fumes of lead

FIRST AID:
ING: Give water, induce vomiting, medical attention immed.
IHL: Move to fresh air, artifical resp. if necessary, medical attent.
Eye/Skin: Irrigate/wash with water. Wash skin thoroughly with soap & water.

SYMPTOMS:
acute(immediate) exposure effects: Cumulative neurotoxin-commonly occurs from prolonged exposure. Symptoms include stomach distress, vomiting, diarrhea, black stools, anemia, nervous system effects.
chronic(long term) exposure effects: 3 clinical types: a-ailmentary-abominal pain, discomfort, constipation or diarrhea, metallic taste, lead line on gum, headache. b-nueromuscular, muscle weakness, joint/muscle pain, dizziness, insomnia, paralysis c-encephalic: brain involvement, stupor, coma, death, rare.
reproductive effects: Human epid. studies have concluded that lead is a poison to male & female germ cells; increased incidence of miscarriages, stillbirths, sterility in females; sperm depression & decreased motiltiy in males

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Nickel Date 2/17/88

DOT Classification _____ Job Number FIL0599SA

CAS Number 7440-02-0

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index (Hazardline) Chris(vol.III)
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual (SAX) (Aldrich)
RTECS other: _____

CHEMICAL PROPERTIES: (Synonyms: raney alloy, nickel particles)
Chemical Formula Ni MW 58.7 Ionization Potential N/A
Physical State powder Boiling Point 4946°F Freezing Point 2651°F
Flash Point N/A Flammable Limits N/A Vapor Pressure N/A
Specific Gravity/Density N/A Odor/Odor Threshold None

Solubility-water: insoluble Solubility-other: _____
Incompatabilities & Reactivity: Strong acids, sulfur, wood, potassium perchlorate, powder form is explosive.

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 1mg/m³ PEL (OSHA) 1mg/m³
STEL soluble .1mg/m³ Ceiling Limits none est. IDLH none est.
Toxicity Data: (Indicate duration of study)
Human; IHL _____ Dermal _____ Oral _____
Rat/Mouse; IHL _____ Dermal _____ Oral Tdlo 158 mg/kg
Aquatic: _____ Other: posit-animal carcinogen
Carcinogen human-sus Mutagen exper Reproductive Toxin exper-teratogen
Route(s) of exposure - (circle all that apply): (Inhalation) (Ingestion) (Dermal Contact) (Eye(ocular)) Dermal Absorption Other _____

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: >any detectable limit - use SCBA
Protective Clothing: Prevent skin exposure or prolonged contact.
Special Equipment: None

DISPOSAL, FIRE and SPILLS: (Use numbered codes; see attached sheets for explanation.)
Disposal P Fire 2 Leaks&Spills 3,4,6,7,8,9
Decomposition Products: Toxic nickel fumes

FIRST AID:
ING: Do not induce vomiting, medical attention to remove by gastric lavage
IHL: Move to fresh air, keep quite/warm. CPR if needed.
Eye/Skin: Irrigate immed. with water. Wash skin with soap & water

SYMPTOMS:
acute(immediate) exposure effects: Irritation of skin, eyes, mucous membranes of upper respiratory tract, nausea, vomiting, giddiness, headache.

chronic(long term) exposure effects: Dermatitis resulting from skin sensitization. Cancer of the lung & nasal passages in nickel refining employees.

reproductive effects: None

SYNS:
SILICON TETRACHLORIDE TETRACHLOROSILANE

TOXICITY DATA: 2 CODEN:
ihl-rat LC50:8000 ppm/4H JIHTAB 31,343,49

Aquatic Toxicity Rating: TLm96:1000-100 ppm WQCHM* 4,-,74. DOT: Corrosive Material, Label: Corrosive FEREAC 41,57018,76. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

SKIN AND EYE IRRITATION DATA: CODEN:
skn-rbt 500 mg/24H SEV 28ZPAK -,14,72
eye-rbt 20 mg/24H SEV 28ZPAK -,14,72

THR: SEV skn, eye irr. MOD ihl. Decomp by water with much heat into silicic acid and HCl.
Disaster Hazard: Dangerous; when heated to decomp it emits highly tox fumes of HCl; will react with water or steam to produce heat and tox and corrosive fumes.
Incomp: Dimethyl sulfoxide, K, Na.

SILICON FLUORIDE

CAS RN: 7783611 NIOSH #: VW 2327000
mf: F_4Si; mw: 104.09

Colorless gas, very pungent odor; mp: −77°; bp: −65° @ 181 mm; d: 4.67.

TOXICITY DATA: 3 CODEN:
DOT: Nonflammable Gas, Label: Nonflammable Gas FEREAC 41,57018,76. Reported in EPA TSCA Inventory, 1980.
THR: No data. See also fluorides and hydrofluoric acid. Very irr to skn, eyes and mu mem.
Disaster Hazard: When heated to decomp it emits tox fumes of F^-.

SILICON OXIDE

mf: OSi; mw: 44.09

THR: No tox data. Explodes spontaneously in air.

SILICON TETRAAZIDE

mf: $N_{12}Si$; mw: 196.17

THR: No tox data. See also azides. Has exploded spont.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

SILK

NIOSH #: VW 2700000

TOXICITY DATA: 3 CODEN:
imp-rat TDLo:36 mg/kg:ETA CNREA8 15,333,55

THR: An exper ETA. In the form of dust it is an allergen and a nuisance dust. A MOD fire hazard and expl hazard.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

SILVER

CAS RN: 7440224 NIOSH #: VW 3500000
af: Ag; aw: 107.87

Soft, ductile, malleable, lustrous, white metal. mp 961.93°, bp: 2212°, d: 10.50 @ 20°.

SYNS:
ARGENTUM SILBER (GERMAN)
C.I. 77820 SILVER ATOM
SHELL SILVER

TOXICITY DATA: 3 CODEN:
mul-rat TDLo:330 mg/kg/43W-I TFX:ETA ZEKBAI 63,586,60
imp-rat TDLo:2400 mg/kg TFX:ETA CNREA8 16,439,56
imp-mus TDLo:11 gm/kg TFX:ETA NATWAY 42,75,55
imp-rat TD:2570 mg/kg TFX:ETA NATWAY 42,75,55
ihl-hmn TCLo:1 mg/m3 TFX:SKN DTLVS* 3,231,71

TLV: Air: 0.1 mg/m3 DTLVS* 4,367,80. *Toxicology Review:* FOREAE 7,313,42; MIBUBI 9(4),321,75; PTPAD4 1,127,76; AJMEAZ 38,409,65; PEXTAR 12,102,69. OSHA Standard: Air: TWA 10 mg/m3 (SCP-N) FEREAC 39,23540,74. Reported in EPA TSCA Inventory, 1980.
THR: An exper ETA. A hmn SKN. See also silver compounds.
Fire Hazard: Mod, in the form of dust, when exposed to flame or by chemical reaction with C_2H_2, NH_3, bromoazide, ClF_3, ethylene imine, H_2O_2, oxalic acid, H_2SO_4, tartaric acid. See also powdered metals.
For further information see Vol. 1, No. 1 of *DPIM Report.*

SILVER ACETYLIDE

mf: C_2HAg; mw: 132.90

THR: No tox data. See also silver compounds.
Explosion Hazard: Very high.
Disaster Hazard: When heated to decomp it emits acrid smoke and fumes.

SILVER AMIDE

mf: AgH_2N; mw: 123.89

THR: No tox data. See also silver compounds. Very explosive when dry.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

SILVER 5-AMINOTETRAZOLIDE

mf: CH_2AgN_5; mw: 191.93

THR: No tox data. See also silver compounds. When heated it explodes.
Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

SILVER AMMONIUM COMPOUNDS

THR: See silver compounds.
Explosion Hazard: Severe, when shocked, exposed to heat or by chemical reaction.

SAX, 5th Ed.

Yellow to amber clear liquid. Sol in water and org solvents. d: 1.068-1.075 @ 25°/25°; bp: 66°-68° @ 3 mm; fp: < −25°.

SYNS:

ACETIC ACID, 2,6-DIMETHYL-M-DIOXAN-4-YL ESTER
ACETOMETHOXAN
6-ACETOXY-2,4-DIMETHYL-M-DIOXANE
DIMETHOXANE
2,6-DIMETHYL-M-DIOXAN-4-OL ACETATE
2,6-DIMETHYL-M-DIOXAN-4-YL ACETATE
DIOXIN (BACTERICIDE) (OBS.)
NCI-C56213

TOXICITY DATA: 3

orl-rat TDLo:948 gm/kg/88W-I:CAR
orl-rat LD50:1930 mg/kg

CODEN:

JNCIAM 53,791,74
GCTB** 3/25/77

Carcinogenic Determination: Animal Positive IARC** 15,177,77. Selected by NTP Carcinogensis Bioassay as of December, 1980. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

THR: MOD orl. An exper CARC. See also esters.

Disaster Hazard: When heated to decomp it emits acrid smoke.

2'-ACETONAPHTHONE

CAS RN: 93083 NIOSH #: AL 2988000
mf: $C_{12}H_{10}O$; mw: 170.22

SYNS:

BETA-ACETONAPHTHALENE
BETA-ACETYLNAPHTHALENE
2-ACETYLNAPHTHALENE
ACETONAPHTHONE
BETA-ACETONAPHTHONE
2-ACETONAPHTHONE
KETONE, METHYL 2-NAPHTHYL
METHYL BETA-NAPHTHYL KETONE
METHYL 2-NAPHTHYL KETONE
BETA-METHYL NAPHTHYL KETONE
1-(2-NAPHTHALENYL)ETHANONE
BETA-NAPHTHYL METHYL KETONE
2-NAPHTHYL METHYL KETONE

TOXICITY DATA: 2

skn-hmn 500 mg/24H
orl-mus LD50:599 mg/kg

CODEN:

FCTXAV 13,681,75
MDZEAK 8,244,67

Reported in EPA TSCA Inventory, 1980.

THR: MOD orl. A hmn skn irr.

Disaster Hazard: When heated to decomp it emits acrid smoke.

ACETONE

CAS RN: 67641 NIOSH #: AL 3150000
mf: C_3H_6O; mw: 58.09

Colorless liquid, fragrant mint-like odor. mp: −94.6°, bp: 56.48°, ulc = 90, flash p: 0°F (CC), lel = 2.6%, uel = 12.8%, d: 0.7972 @ 15°, autoign. temp. (color): 869°F, vap. press: 400 mm @ 39.5°, vap. d: 2.00. Misc in water, alc, and ether.

SYNS:

ACETON (GERMAN, DUTCH, POLISH)
DIMETHYLFORMALDEHYDE
DIMETHYLKETAL
DIMETHYL KETONE
KETONE PROPANE
BETA-KETOPROPANE
METHYL KETONE
PROPANONE
2-PROPANONE
PYROACETIC ACID
PYROACETIC ETHER

TOXICITY DATA: 2-1

ihl-man TDLo:440 µg/M³/6M
ihl-man TDLo:10 mg/M³/6H
orl-mus LD50:3000 mg/kg
eye-hmn 500 ppm
skn-rbt 395 mg open MLD
eye-rbt 3950 ug SEV
ihl-hmn TCLo:500 ppm:EYE
ihl-man TCLo:12000 ppm/4H:CNS
unk-man LDLo:1159 mg/kg
orl-rat LD50:9750 mg/kg
ihl-rat LCLo:64000 ppm/4H
ipr-rat LDLo:500 mg/kg
ihl-mus LCLo:110000 mg/m3/62M
ipr-mus LD50:1297 mg/kg
orl-dog LDLo:24 gm/kg
ipr-dog LDLo:8 gm/kg
scu-dog LDLo:5 gm/kg
orl-rbt LD50:5300 mg/kg
skn-rbt LD50:20 gm/kg
scu-gpg LDLo:5000 mg/kg

CODEN:

GISAAA 42(8)42,77
GISAAA 42(8)42,77
PCJOAU 14,162,80
JIHTAB 25,282,43
UCDS** 5/7/70
AJOPAA 29,1363,46
JIHTAB 25,282,43
AOHYA3 16,73,73
85DCAI 2,73,70
UCDS** 5/7/70
AIHQA5 17,129,56
JPPMAB 11,150,59
AGGHAR 5,1,33
SCCUR* -,1,61
AEXPBL 18,218,1884
AEXPBL 18,218,1884
AEXPBL 18,218,1884
12VXA5 8,7,68
UCDS** 5/7/70
AGGHAR 5,1,33

Aquatic Toxicity Rating: TLm96:over 1000 ppm WQCHM* 4,-,74.

TLV: Air: 750 ppm DTLVS* 4,5,80. *Toxicology Review:* 27ZTAP 3,7,69. OSHA Standard: Air: TWA 1000 ppm (SCP-A) FEREAC 39,23540,74. DOT: Flammable Liquid, Label: Flammable Liquid FEREAC 41, 57018,76. Occupational Exposure to Ketones recm std: Air: TWA 590 mg/m3 NTIS** "NIOSH Manual of Analytical Methods" VOL 1 127, VOL 2 S1. Reported in EPA TSCA Inventory, 1980.

THR: A hmn EYE, CNS. A skn, eye irr @ 500 ppm. MOD ipr, unk. LOW orl, ihl, ipr, scu skn. VERY LOW via dermal route. Acetone is narcotic in high conc. In industry, no injurious effects from its use have been reported, other than the occurrence of skn irr resulting from its defatting action, or headache from prolonged inhal. A food additive permitted for human consumption. A common air contaminant.

Fire Hazard: Dangerous, when exposed to heat or flame or oxidizers. Incomp: with ($CHCl_3$ + a base), CrO, $Cr(OCl)_2$, (nitric + acetic acid), (nitric + sulfuric acid), NOCl, nitrosyl perchlorate, nitryl perchlorate, permonosulfuric acid, potassium tert-butoxide, NaOBr, (sulfuric acid + potassium dichromate), (thio-diglycol + hydrogen peroxide), trichloromelamine, bromoform, air, HNO_3, activated C, chloroform, H_2SO_4, BF_3, Br_2, chromyl chloride, H_2O_2, F_2O_2, SCl_2, thiotrithiazyl perchlorate, H_2O_5S.

Explosion Hazard: Mod when vapor is exposed to flame.

Disaster Hazard: Dangerous, due to fire and explosion hazard, can react vigorously with oxidizing materials.

To Fight Fire: CO_2, dry chemical, alcohol foam.

For further information see Vol. 1, No. 4 of *DPIM* report.

ACETONE CHLOROFORM

CAS RN: 57158 NIOSH #: UC 0175000
mf: $C_4H_7Cl_3O$; mw: 177.46

Crystals, camphor odor. mp: 97°, bp: 167°.

CAV TMFD

SYNS:

CREATINOLO-O-FOSFATO (ITALIAN)
CREATINOL-O-PHOSPHATE
1-(2-HYDROXYETHYL)-1-METHYLGUANIDINE DIHYDROGEN PHOSPHATE (ESTER)
N-METHYL-N-(BETA-HYDROXYAETHYL)GUANIDINE-O-PHOSPHATE (GERMAN)
N-METHYL-N-(BETA-HYDROXYETHYL)GUANIDINE-O-PHOSPHATE

TOXICITY DATA: 2	CODEN:
ipr-rat LD50:4800 mg/kg	ARZNAD 29,1449,79
ivn-rat LD50:1300 mg/kg	ARZNAD 29,1449,79
ipr-mus LD50:3000 mg/kg	ARZNAD 29,1449,79
ivn-mus LD50:1200 mg/kg	ARZNAD 29,1449,79
ipr-gpg LD50:3200 mg/kg	ARZNAD 29,1449,79
ivn-gpg LD50:1500 mg/kg	ARZNAD 29,1449,79

THR: MOD ipr, ivn. LOW ipr.

Disaster Hazard: When heated to decomp it emits very tox fumes of PO_x and NO_x.

CRESOL

CAS RN: 1319773 NIOSH #: GO 5950000
mf: C_7H_8O; mw: 108.15

Description (U.S.P. XVI): mixture of isomeric cresols obtained from coal tar, colorless or yellowish to brown-yellow or pinkish liquid, phenolic odor. mp: 10.9°-35.5°, bp: 191°-203°, flash p: 178°F, d: 1.030-1.038 @ 25°/25°, vap. press: 1 mm @ 38-53°, vap. d: 3.72.

SYNS:

ACEDE CRESYLIQUE (FRENCH)
CRESOLI (ITALIAN)
CRESYLIC ACID
HYDROXYTOLUOLE (GERMAN)
KRESOLE (GERMAN)
KRESOLEN (DUTCH)
KREZOL (POLISH)

TOXICITY DATA: 2	CODEN:
orl-rat LD50:1454 mg/kg	NTIS** PB214-270
orl-mus LD50:861 mg/kg	NTIS** PB214-270
skn-rbt LD50:2000 mg/kg	TXAPA9 42,417,77

Aquatic Toxicity Rating: TLm96:10-1 ppm WQCHM* 4,-,74.

TLV: Air: 5 ppm DTLVS* 4,106,80. Toxicology Review: 27ZTAP 3,42,69. OSHA Standard: Air: TWA 5 ppm (skin) (SCP-L) FEREAC 39,23540,74. Occupational Exposure to Cresol recm std: Air: TWA 10 mg/m3 NTIS**. "NIOSH Manual of Analytical Methods" vol 3 S167. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

THR: MOD via oral and inhal routes. Cresol is similar to phenol in its action on the body, but it is less severe in its effects. It has corrosive action on the skin and mu mem. Systemic poisoning has rarely been reported, but it is possible that absorption may result in damage to the kidneys, liver and nervous system. The main hazard accompanying its use in industry lies in its action on the skin and mu mem, with production of severe chemical burns and dermatitis.

Fire Hazard: Mod, when exposed to heat or flame.

Explosion Hazard: Slight, in the form of vapor when exposed to heat or flame. Reacts violently with HNO_3, oleum, chlorosulfonic acid.

Explosive Range: 1.35% @ 300°F.

Disaster Hazard: Dangerous; when heated to decomp it emits highly tox fumes; can react vigorously with oxidizing materials.

To Fight Fire: Foam, CO_2, dry chemical.

m-CRESOL

CAS RN: 108394 NIOSH #: GO 6125000
mf: C_7H_8O; mw: 108.15

Colorless to yellowish liquid, phenolic odor. mp: 10.9° bp: 202.8°, lel: 1.1% @ 302°F, flash p: 202°F, d: 1.034 @ 20°/4°, autoign. temp.: 1038°F, vap. press: 1 mm @ 52.0°, vap. d: 3.72.

SYNS:

3-CRESOL
M-CRESYLIC ACID
1-HYDROXY-3-METHYLBENZENE
M-HYDROXYTOLUENE
M-KRESOL
M-METHYLPHENOL
3-METHYLPHENOL
M-OXYTOLUENE

TOXICITY DATA: 3	CODEN:
skn-rbt 517 mg/24H SEV	BIOFX* 3-5/69
eye-rbt 103 mg SEV	BIOFX* 3-5/69
skn-mus TDLo:2280 mg/kg/20W-1:NEO	CNREA8 19,413,59
orl-rat LD50:242 mg/kg	BIOFX* 3-5/69
skn-rat LD50:620 mg/kg	GTPZAB 18,58,74
scu-rat LDLo:900 mg/kg	HBTXAC 5,56,59
unk-rat LD50:350 mg/kg	JPETAB 51,227,34
orl-mus LD50:828 mg/kg	GTPZAB 18,58,74
ipr-mus LD50:168 mg/kg	HBTXAC 5,56,59
scu-mus LDLo:450 mg/kg	HBAMAK 4,1361,35
ivn-dog LDLo:150 mg/kg	HBTXAC 5,56,59
scu-cat LDLo:180 mg/kg	JPETAB 80,233,44
orl-rbt LDLo:1400 mg/kg	JPETAB 80,233,44
skn-rbt LD50:2050 mg/kg	BIOFX* 3-5/69
scu-rbt LDLo:500 mg/kg	HBAMAK 4,1361,35
ivn-rbt LDLo:280 mg/kg	JPETAB 80,233,44
ipr-gpg LDLo:100 mg/kg	HBAMAK 4,1361,35
scu-gpg LDLo:300 mg/kg	HBTXAC 5,56,59
scu-frg LDLo:250 mg/kg	HBAMAK 4,1361,35

TLV: Air: 5 ppm DTLVS* 3,61,71. *Toxicology Review:* MUREAV 47(2),75,78. OSHA Standard: Air: TWA 5 ppm (skin) (SCP-L) FEREAC 39,23540,74. Occupational Exposure to Cresol recm std: Air: TWA 10 mg/m3 NTIS**. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

THR: An exper NEO. HIGH-MOD orl, skn, scu, unk, ipr, ivn. SEV eye, skn irr in rbt. See cresol.

Fire Hazard: See cresol.

Explosion Hazard: Mod, in the form of vapor when exposed to heat or flame.

Disaster Hazard: See cresol.

o-CRESOL

CAS RN: 95487 NIOSH #: GO 6300000
mf: C_7H_8O; mw: 108.15

Crystals or liquid darkening with exposure to air and light. mp: 30.8°, bp: 190.8°, flash p: 178°F, d: 1.047 @ 20°/4°, autoign. temp.: 1110°F, vap. press: 1 mm @ 38.2°, vap. d. 3.72, lel = 1.4% @ 300°F.

SAX 5th Ed.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Cresol (all isomers) Date 2/17/88

DOT Classification _____ Job Number FFL0599SA

CAS Number 1319-77-3

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index (Hazardline) (Chris(vol.III))
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual (SAX) (Aldrich)
RTECS other: _____

CHEMICAL PROPERTIES: (Synonyms: Cresylic Acid; ortho,meta,para-cresols)
Chemical Formula $CH_3C_6H_4OH$ MW 108 Ionization Potential 8.98ev
Physical State liquid Boiling Point 383-446°F Freezing Point 54-95°F
Flash Point 178-187°F Flammable Limits LEL-1.4% Vapor Pressure .11mm
Specific Gravity/Density 1.03-1.047 Odor/Odor Threshold 5ppm
Solubility-water: Soluble Solubility-other: _____
Incompatabilities & Reactivity: Strong oxidizers,acids,active metals

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 5ppm PEL (OSHA) 5ppm
STEL none est. Ceiling Limits none est. IDLH 250ppm
Toxicity Data: (Indicate duration of study)
Human; IHL _____ Dermal _____ Oral _____
Rat/Mouse; IHL _____ Dermal _____ Oral LD50 1454 mg/kg
Aquatic: Tlm96:10-1ppm Other: _____
Carcinogen N/A Mutagen N/A Reproductive Toxin N/A
Route(s) of exposure - (circle all that apply): (Inhalation) (Ingestion)
(Dermal Contact) (Eye(ocular)) (Dermal Absorption) Other Very skin corrosive

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: <50 ppm-APR w/organic cart. >50 ppm - SCBA
Protective Clothing: Exel-viton; good-neoprene, saranax, natural rubber;
Poor-butyl, nitrile.
Special Equipment: Prevent skin/eye° contact with liquid.

DISPOSAL, FIRE and SPILLS: (Use numbered codes; see attached sheets for explanation.)
Disposal A Fire 3,7 Leaks&Spills 3.4.6.7.8.9
Decomposition Products: toxic fumes

FIRST AID:
ING: medical attention, immed. Induce vomiting-syrup of epecac..
IHL: Move to fresh air, artificial resp. if necessary, medical atten.
Eye/Skin: Irrigate/rinse with water for at least 15 min. Wash skin thoroughly with soap & water.

SYMPTOMS:
acute(immediate) exposure effects: Vapors: irritation to eyes, nose, throat, resp. system, headache, nausea, dizziness, severe burns. Systemic poision that also causes muscle weakness, ringing in ears, dimness of vision, rapid breathing loss of consciousness, possible death.

ronic(long term) exposure effects: Systemic poisoning with severe symptoms sted above with possible liver & kidney damage.

reproductive effects: None

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Ethyl Benzene Date 2/17/88

DOT Classification _____ Job Number FIL0595A

CAS Number 100-41-4

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index (Hazardline) (Chris(vol.III))
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual (SAX) (Aldrich)
RTECS other: _____

CHEMICAL PROPERTIES: (Synonyms: Phenylethane, ethyl benzol)
Chemical Formula C2H5C6H5 MW 106 Ionization Potential 8.76 ev
Physical State liquid Boiling Point 277°F Freezing Point -139°F
Flash Point 59°F Flammable Limits 1.0-6.7% Vapor Pressure 7.1mm
Specific Gravity/Density 0.867 Odor/Odor Threshold 140ppm

Solubility-water: slightly Solubility-other: _____
Incompatabilities & Reactivity: Oxidizers, ozone, oxygen

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 100ppm PEL (OSHA) 100ppm
STEL 125ppm Ceiling Limits none est. IDLH 2000ppm
Toxicity Data: (Indicate duration of study)
Human; IHL Tclo 100ppm/8hr Dermal _____ Oral _____
Rat/Mouse; IHL Lc50 400ppm/4hr Dermal _____ Oral LD50 3500mg/kg
Aquatic: T/M 96:100-10ppm Other: _____
Carcinogen neg. Mutagen neg. Reproductive Toxin exp. teratogen
Route(s) of exposure - (circle all that apply): (Inhalation) (Ingestion)
(Dermal Contact) (Eye Contact) Dermal Absorption Other _____

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: 100ppm APR w/chemical cartridge, 2000ppm-SCBA
Protective Clothing: Excel-viton; Poor-butyl, natural; Var-neoprene, nitrile
Special Equipment: None

DISPOSAL, FIRE and SPILLS: (Use numbered codes; see attached sheets for explanation.)
Disposal D Fire 6.7 Leaks&Spills 3,4,5,6,9
Decomposition Products: CO, CO_2

FIRST AID:
ING: Do not induce vomiting, medical attent. to rembve by gastric lavage.
IHL: Move to fresh air, CPR if necessary, medical attent.
Eye/Skin: Irrigate immed. w/water. wash skin thoroguhly w/soap & water

SYMPTOMS:
acute(immediate) exposure effects: Irritation of skin, eyes, nose, mucous membranes. Dizziness, constriction of chest, lacrimation, nausea, headache, vomiting, CNS depression.

chronic(long term) exposure effects: Skin contact may cause erythema & skin inflammation. No other data for chronic effects.

reproductive effects: None

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Methylene Chloride Date 2/17/88

DOT Classification _____ Job Number FIL0599SA

CAS Number 75-09-2

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index (Hazardline) (Chris(vol.III))
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual (SAX) (Aldrich)
RTECS other: _____

CHEMICAL PROPERTIES: (Synonyms: Methane dichloride, methylene dichloride)
Chemical Formula CH_2Cl_2 MW 85 Ionization Potential 11.35ev
Physical State liquid Boiling Point 104°F Freezing Point -142°F
Flash Point None Flammable Limits 12-19% Vapor Pressure 350mm
Specific Gravity/Density 1.322 Odor/Odor Threshold 205-307ppm

Solubility-water: insoluble Solubility-other: _____
Incompatabilities & Reactivity: Strong oxidizers, caustics, chem. active meta

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 100ppm PEL (OSHA) 500ppm
STEL None est. Ceiling Limits 1000ppm IDLH 5000ppm
Toxicity Data: (Indicate duration of study)
Human; IHL Tclo 500ppm/8/ Dermal _____ Oral _____
Rat/Mouse; IHL Tclo 500ppm/6Hr Dermal _____ Oral _____
Aquatic: T/M 96:1000-100ppm Other: _____
Carcinogen Indef. Mutagen exper. Reproductive Toxin N/A
Route(s) of exposure - (circle all that apply): (Inhalation) (Ingestion)
(Skin Contact) (Eye Contact) Dermal Absorption Other _____

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: 750 ppm use SCBA
Protective Clothing: good-viton, polyurethane; fair-butyl, nitrile, neoprene
Special Equipment: None

DISPOSAL, FIRE and SPILLS: (Use numbered codes; see attached sheets for explanation.)
Disposal B Fire 11.13 Leaks&Spills 1,4,6,9
Decomposition Products: hydrogen chloride & phosgene gas

FIRST AID:
ING: Contact physician immediately
IHL: Remove to fresh air, artifical resp. if necessary, med. attent.
Eye/Skin: Irrigate/flush with water immed. Wash skin thoroughly with soap & water.

SYMPTOMS:
acute(immediate) exposure effects: IHL: anesthetic effects, nausea, drunkenes central nervous system depression loss of memory. ING: nausea, tingling/ numbness in limbs. irritating to skin/eyes.

chronic(long term) exposure effects: No late effects, but may cause dermatiti upon prolonged exposure. Can worsen angina or other heart diseases.

reproductive effects: None

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Trichloroethylene Date 2/17/88

DOT Classification _____ Job Number FIL0599SA

CAS Number 79-01-6

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index Hazardline (Chris(vol.III)) (ACGIH TLV Booklet) Toxic & Hazardous Safety Manual (SAX) (Aldrich) (RTECS) other: Sittig

CHEMICAL PROPERTIES:(Synonyms: TCE, trichloroethene,ethylene trichloride)
Chemical Formula C_2HCl_3 MW 131 Ionization Potential 9.47ev
Physical State liquid Boiling Point 188°F Freezing Point -123°F
Flash Point None Flammable Limits 8-10.5% Vapor Pressure 58mm
Specific Gravity/Density 1.46 Odor/Odor Threshold 50ppm
Solubility-water: Insoluble Solubility-other: _____
Incompatabilities & Reactivity: Strong caustics,chemically active metals

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 50ppm PEL (OSHA) 100ppm
STEL 200ppm Ceiling Limits 200ppm IDLH 1000ppm
Toxicity Data: (Indicate duration of study)
Human; IHLTclo 160ppm/83min Dermal _____ Oral _____
Rat/Mouse; IHLLclo 8000ppm/4hr Dermal _____ Oral _____
Aquatic: T/M 96:100-10ppm Other: exp. human carcinogen
Carcinogen pos-anim. Mutagen exper. Reproductive Toxin exp. teratogen
Route(s) of exposure - (circle all that apply): (Inhalation) (Ingestion) (Dermal Contact) (Eye(ocular)) Dermal Absorption Other _____

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: 500ppm - APR w/organic cartridge; 1000ppm-SCBA
Protective Clothing: Excel-viton;Good-neoprene/styrene;Poor-butyl,neoprene, nitrile.
Special Equipment: None

DISPOSAL,FIRE and SPILLS:(Use numbered codes;see attached sheets for explanation.)
Disposal A Fire 11.13 Leaks&Spills 1,4,6,9
Decomposition Products: CO, CO_2, hydrogen chloride & phosgene gas

FIRST AID:
ING:Give large amounts of water, induce vomiting,medical attent.
IHL: Remove to fresh air, CPR if necessary, medical attent. immed.
Eye/Skin:Irrigate/flush with water for at least 15 min. Wash skin thoroughly with soap and water.

SYMPTOMS:
acute(immediate) exposure effects: Irritation of nose & throat, nausea, blurred vision, irritaiton to eyes,dermatitis.

Chronic(long term) exposure effects: Liver and/or kidney damage,cardiac degeneration, central nervous system degeneration.

Reproductive effects: Has produced reproductive effects in experimental animals.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name 1,1,1-Trichloroethane Date 2/17/88

DOT Classification _____ Job Number FIL0599SA

CAS Number 71-55-6

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index (Hazardline) (Chris(vol.III)
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual (SAX) (Aldrich)
(RTECS) other: _____

CHEMICAL PROPERTIES:(Synonyms: Methyl Chloroform, Chlorothane)
Chemical Formula CH_3CCl_3 MW 133 Ionization Potential 10.2 ev
Physical State liquid Boiling Point 165°F Freezing Point -36°F
Flash Point None Flammable Limits 7-16% Vapor Pressure 100mm
Specific Gravity/Density 1.31 Odor/Odor Threshold 100pppm/chloroform
Solubility-water: Insoluble Solubility-other: _____
Incompatabilities & Reactivity: Strong oxidizers,caustics,chem. active metals

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 350ppm PEL (OSHA) 350ppm
STEL 450 ppm Ceiling Limits 350ppm IDLH 1000ppm
Toxicity Data: (Indicate duration of study)
Human; IHL Tclo 920ppm/70M Dermal _____ Oral Tdlo 670mg/kg
Rat/Mouse; IHL Lc10 1000ppm Dermal _____ Oral LD50 1030mg/kg
Aquatic: Tlm 96:100-10ppm Other: _____
Carcinogen Indef-anim. Mutagen exper. Reproductive Toxin teratogen
(te(s) of exposure - (circle all that apply): (Inhalation) (Ingestion)
(rmal Contact) (Eye(ocular)) (Dermal Absorption) Other _____

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: 500ppm - use APR; >1000ppm use SCBA.
Protective Clothing: Excel.-viton;good-butyl;poor-neoprene,nitrile.
Special Equipment: Avoid contact.

DISPOSAL,FIRE and SPILLS:(Use numbered codes;see attached sheets for explanation.)
Disposal A Fire 3.7 Leaks&Spills 6,9,11
Decomposition Products: CO, CO_2, hydrogen chloride, and phosgene gas.

FIRST AID:
ING:Get medical attent. immed.,induce vomiting.
IHL: Remove to fresh air,artifical resp. if necessary, medical attent.
Eye/Skin: Wash/irrigate with large amounts of water for at least 15 min.
Wash skin thoroughly with soap and water.

SYMPTOMS:
acute(immediate) exposure effects: Irritating to eyes,skin,mucous membranes.
IHL:Incoorindation, confusion, drowsiness, possible loss of consciousness, nausea if ingested.

chronic(long term) exposure effects: Dermatitis, liver and/or kidney damage. Consumption of alchohol may increase the toxic effects of exposure.

) roductive effects: Caused teratogenic effects in animals. None documented ... humans, still experimental.

Ecology and Environment, Inc.
Hazard Evaluation of Chemicals
Region V - Chicago

Chemical Name Xylene (mixed isomers) Date 2/17/88

DOT Classification _____ Job Number FIL0599SA

CAS Number 1330-20-7

REFERENCES CONSULTED (circle; also include MSDS if approprate.)
(NIOSH/OSHA Pocket Guide) Merck Index (Hazardline) (Chris(vol.III))
(ACGIH TLV Booklet) Toxic & Hazardous Safety Manual (SAX) (Aldrich)
RTECS other: Sittig

CHEMICAL PROPERTIES:(Synonyms: dimethyl benzene, aromatic hydrocarbons)
Chemical Formula $C_6H_4(CH_3)_2$ MW 106 Ionization Potential 8.56/8.44ev
Physical State liquid Boiling Point 292/282°F Feezing Point -12°F
Flash Point 81-90°F Flammable Limits 1-7% Vapor Pressure 7-9mm
Specific Gravity/Density .864 Odor/Odor Threshold .05ppm
Solubility-water: Insoluble Solubility-other: Miscible-ether,ethanol
Incompatabilities & Reactivity: strong oxidizers

TOXICOLOGICAL PROPERTIES:
Exposure Limits: TLV-TWA (ACGIH) 100ppm PEL (OSHA) 100ppm
STEL 150ppm Ceiling Limits none est. IDLH 10,000ppm
Toxicity Data: (Indicate duration of study)
Human; IHL Tclo 200ppm Dermal _____ Oral _____
Rat/Mouse; IHL _____ Dermal _____ Oral _____
Aquatic: 96hr: 22ppm Other: _____
Carcinogen neg-anim Mutagen exper Reproductive Toxin exp.teratogen
Route(s) of exposure - (circle all that apply): (Inhalation) (Ingestion)
(Dermal/Contact) (Eye/Ocular) Dermal Absorption Other _____

HANDLING RECOMMENDATIONS: (personal protective measures)
Respirators: 1000 ppm APR, 5000 ppm - SCBA
Protective Clothing: Good-nitrile,viton; poor-butyl rubber,neoprene.
Special Equipment: Safety goggles,protective clothing for prolonged exposures.
DISPOSAL,FIRE and SPILLS: (Use numbered codes;see attached sheets for explanation.)
Disposal D Fire 6,7 Leaks&Spills 3,4,5,6,9
Decomposition Products: CO, CO_2

FIRST AID:
ING: Do not induce vomiting, contact physician; immediately.
IHL: Move to fresh air, artificial resp. if necessary.
Eye/Skin: Irrigate/rinse with water for at least 15 min. Wash skin throughly with soap and water.
SYMPTOMS:
acute(immediate) exposure effects: Vapors cause dizziness, headache, coughing pulmonary distress & edema. Nausea,vomiting,abdominal cramps also seen with over-exposure.

Chronic(long term) exposure effects: Possible liver and/or kidney damage, pulmonary congestion. Ingestion may be fatal.

Reproductive effects: None

ppm for ½ hr; inhal LC_{Lo} (guinea pig) = 5000 ppm for 5 min. [3]

THR = HIGH irr via inhal route and to skin, eyes and mu mem.

This gas is dangerous to the eyes, as it causes irr and inflammation of the conjunctiva. It has a suffocating odor and is a corrosive and poisonous material. In moist air or fogs, it combines with water to form sulfurous acid, but is only very slowly oxidized to sulfuric acid. Conc of 6–12 ppm cause immediate irr of the nose and throat, while 0.3–1 ppm can be detected by the average individual possibly by taste rather than by sense of smell. 3 ppm has an easily noticeable odor and 20 ppm is the least amount which is irr to the eyes. 10,000 ppm is an irr to moist areas of the skin within a few minutes of exposure.

It chiefly affects the upper respiratory tract and the bronchi. It may cause edema of the lungs or glottis, and can produce respiratory paralysis. Conc of <1 ppm are believed to be injurious to plant foliage.

This material is so irr that it provides its own warning of toxic conc. 400–500 ppm is immediately dangerous to life and 50–100 ppm is considered to be the maximum permissible conc for exposures of 30–60 min. Excessive exposures to high enough conc of this material can be fatal. Its toxicity is comparable to that of hydrogen chloride. However, less than fatal conc can be borne for fair periods of time with no apparent permanent damage. It is used as a fumigant, insecticide and fungicide, and a chemical preservative food additive. [*109*] It is a common air contaminant. It reacts violently with acrolein, Al, $CsHC_2$, CsO, chlorates, ClF_3, Cr, FeO, F_2, Mn, KHC_2, $KClO_3$, Rb_2C_2, Na, Na_2C_2, SnO, lithium acetylene carbide diammino. [*19*]

Disaster Hazard: Dangerous; will react with water or steam to produce toxic and corrosive fumes.

Treatment and Antidotes: Personnel who have shown toxicity symptoms when exposed to this material should immediately be removed to fresh air. If the eyes are involved they should be irrigated with copious quantities of warm water. If the symptoms persist, call a physician.

SULFURETTED HYDROGEN. See hydrogen sulfide.

SULFUR FLOUR. See sulfur.

SULFUR FLUORIDE. Syn: *sulfur monofluoride*. Colorless gas. S_2F_2, mw: 102.12, mp: −104.5°, bp: −99°, d(liquid): 1.5 @ −100°.

THR = See fluorides and hydrofluoric acid.

SULFUR HEPTOXIDE. Syn: *persulfur heptoxide*. Viscous liquid or possibly needle-like crystals. S_2O_7, mw: 176.1, mp: 0°, bp: sublimes @ 10°.

THR = HIGH irr via oral and inhal to skin, eyes and mu mem.

Fire Hazard: Mod, when exposed to heat or flame or by chemical reaction. When heated, or in contact with water or alcohol, it liberates oxygen.

Disaster Hazard: Dangerous; when heated to decomp, emits highly toxic fumes of SO_x; can react with reducing materials.

To Fight Fire: CO_2, dry chemical.

SULFUR HEXAFLUORIDE. Colorless gas. SF_6, mw: 146.06, mp: −51° (sublimes @ −64°), vap. d: 6.602, d(liquid): 1.67 @ −100°.

THR = This material is chemically inert in the pure state and is considered to be physiologically inert as well. However, as it is ordinarily obtainable, it can contain variable quantities of the low sulfur fluorides. Some of these are toxic, very reactive chemically and corrosive in nature. These materials can hydrolyze on contact with water to yield hydrogen fluoride, which is highly toxic and very corrosive. In high conc and when pure it may act as a simple asphyxiant. Vigorous reaction with disilane. [*19*] May explode.

Disaster Hazard: Dangerous; when heated to decomp, emits highly toxic fumes of fluorides and SO_x.

SULFURIC ACID. Syns: *oil of vitriol, dipping acid*. Colorless, oily liquid. H_2SO_4, mw: 98.08, mp: 10.49°, bp: 330°, d: 1.834, vap. press 1 mm @ 145.8°.

Acute tox data: Oral LD_{50} (rat) = 2140 mg/kg. [3]

THR = MOD via oral route. Extremely irr, corrosive and toxic to tissue. Contact with the body results in rapid destruction of tissue, causing severe burns. No systemic effects due to continual ingestion of small amounts of this material have been noted. There are systemic effects secondary to tissue damage caused by contact with it. However, repeated contact with dilute solutions can cause a dermatitis, and repeated or prolonged inhal of a mist of sulfuric acid can cause an inflammation of the upper respiratory tract leading to chronic bronchitis. Sensitivity to sulfuric acid or mists or vapors varies with individuals. Normally 0.125–0.50 ppm may be mildly annoying and 1.5–2.5 ppm can be definitely unpleasant. 10–20 ppm is unbearable.

Workers exposed to low conc of the vapor gradually lose their sensitivity to its irr action. Inhal of conc vapor or mists from hot acid or oleum can cause rapid loss of consciousness with serious damage to lung tissue. In conc form it acts as a powerful caustic to the skin destroying the epidermis and penetrating some distance into the skin and sub-

SAX, 5th Ed.

cutaneous tissues, in which it causes necrosis. This causes great pain, and, if much of the skin is involved, it is accompanied by shock, collapse and symptoms similar to those seen in severe burns. The fumes or mists of this material cause coughing and irr of the mu mem of the eyes and upper respiratory tract. Severe exposure may cause a chemical pneumonitis; erosion of the teeth due to exposure to strong acid fumes has been recog in industry. It is used as a general purpose food additive; it migrates to food from packaging materials. [*109*] A common air contaminant.

Fire Hazard: This is a very powerful, acidic oxidizer which can ignite or even explode on contact with many materials; i.e., acetic acid, acetone cyanhydrin, (acetone + HNO_3), (acetone + $K_2Cr_2O_7$), acetonitrile, acrolein, acrylonitrile, (acrylonitrile + H_2O), (alcohols + H_2O_2), allyl alcohol, allyl chloride, NH_4OH, 2-amino ethanol, NH_4triperchromate, aniline, (bromates + metals), BrF_5, *n*-butyraldehyde, carbides, $CoHC_2$, chlorates, (metals + chlorates), ClF_3, chlorosulfonic acid, Cu_3N, diisobutylene. (dimethyl benzylcarbinol + H_2O_2), epichlorohydrin, ethylene cyanhydrin, ethylene diamine, ethylene glycol, ethylene imine, fulminates, HCl, H_2, IF_7, (indene + HNO_3), Fe, isoprene, Li_6Si_2, Hg_3N_2, mesityl oxide, metals, (HNO_3 + glycerides), *p*-nitrotoluene, perchlorates, $HClO_4$, (C_6H_6 + permanganates), pentasilver trihydroxydiamino phosphate, (1-phenyl-2-methyl propyl alcohol + H_2O_2), P, $P(OCN)_3$, picrates, potassium-*tert*-butoxide, $KClO_3$, $KMnO_4$, ($KMnO_4$ + KCl), ($KMnO_4$ + H_2O), β-propiolactone, $RbHC_2$, propylene oxide, pyridine, Na, Na_2CO_3, NaOH, steel, styrene monomer, water, vinyl acetate, (HNO_3 + toluene). [*19*]

Disaster Hazard: Dangerous; when heated, emits highly toxic fumes; will react with water or steam to produce heat; can react with oxidizing or reducing materials.

Treatment and Antidotes: Speed in removing this material from contact with the body is of primary importance. Start first aid at once. In all cases of contact in any form, delay can result in serious injuries and all persons injured should be referred to a physician. However, immediately give prolonged applications of running water to wash the material off the body. Remove contaminated clothing. Subject patient to a deluge type of shower if this is available. Do not attempt to neutralize the acid in contact with the skin until all areas of contact have been thoroughly irrigated with running water. Then applications of mild alkaline solutions may be in order. Shock symptoms will often be noted in cases of severe or extensive burns. In such a case, put patient on his back, keep him warm but not hot until physician arrives. Do not apply oils or ointments to burned area without instructions from a physician. If eyes are involved, they should immediately be irrigated with copious quantities of warm water for at least 15 min.

If the material has been taken internally, it causes burns of the mu mem of the throat, esophagus, and stomach. Do not attempt to induce vomiting in patients who have swallowed strong solutions of sulfuric acid. Do not give anything by mouth to an unconscious patient. If he is conscious, encourage him to wash out his mouth with copious amounts of water, then have him drink milk mixed with whites of eggs. If this is not available, have him drink as much water as possible. Get medical help.

SULFURIC ACID, AROMATIC. Syn: *elixir of vitriol.* Clear, reddish-brown liquid, peculiar aromatic odor, pleasant acid taste when diluted.

THR = Corrosive. See sulfuric acid.

Fire Hazard: Mod, when exposed to heat or flame. See also ethyl alcohol and sulfuric acid.

Explosion Hazard: Mod, in the form of vapor (ethyl alcohol) when exposed to flame.

Disaster Hazard: Dangerous; see sulfuric acid and ethyl alcohol.

SURFURIC ACID, FUMING. See oleum.

SULFURIC ACID MIST. An airborne suspension of sulfuric acid in the form of droplets.

Acute tox data: Inhal TC_{LO} (human) = 3 mg/m^3 ⟶ irr of the mouth, skin and eyes. Inhal TC_{LO} (human) = 0.35 mg/m^3 for 3 min ⟶ pulmonary irr effects; inhal LC_{LO} (rat) = 178 ppm for 7 hrs; inhal LC_{LO} (mice) = 140 ppm for 3½ hrs. [*3*]

THR = HIGH irr to skin, eyes and mu mem.

SULFURIC ACID SLUDGE. See selenium compounds.

SULFURIC CHLORIDE. See sulfuryl chloride.

SULFURIC CHLOROHYDRIN. See chlorsulfonic acid.

SULFURIC ETHER. See ethyl ether.

SULFURIC OXYCHLORIDE. See sulfuryl chloride.

SULFURIC OXYFLUORIDE. See sulfuryl fluoride.

SULFUR MONOBROMIDE. See sulfur bromide.

SULFUR MONOCHLORIDE. See sulfur chloride.

SULFUR MONOFLUORIDE. See sulfur fluoride.

SULFUR MONOOXYTETRACHLORIDE. Dark red liquid. S_2OCl_4, mw: 221.96, bp: 60°–61°, d: 1.656 @ 0°.

SAX, 5th ed.

Medtox Hotline

1. Twenty-four hour answering service - (501) 370-8263

   What to Report:

   - o State: "This is an emergency."
   - o Your name, region, and site
   - o Telephone number to reach you
   - o Name of person injured or exposed
   - o Nature of emergency
   - o Action taken

2. One of three toxicologists (Drs. Raymond Harbison, Richard Freeman, or Robert James) will contact you. Repeat the information given to the answering service.

3. If a toxicologist does not return your call within 15 minutes, call the following persons, in order, until contact is made:

   E & E Corporate Headquarters (EST 0830-1700) - (716) 632-4491

   a. Twenty-four hour line - (716) 631-9530

   b. Corporate Safety Director - Paul Jonmaire (office)(716) 632-4491

   c. Assistant Corporate Safety Officer - Steve Sherman (home) (716) 688-0084

   d. Manager of Health and Safety - Paul Moss (Home) (312) 541-6635

Chicago Regional Office

Office Phone Number: (312) 663-9415

	Name	Home
Office Manager	Rene' Van Someren	(312)763-7335
Manager of Health and Safety	Paul Moss	(312)541-6635

ECOLOGY & ENVIRONMENT, INC.
REGION V EMERGENCY INFORMATION

Revised 10/87
PDM

NAME	EMERGENCY CONTACTS	BLOOD TYPE	DOCTOR/HOSPITAL PREFERENCES	SPECIAL MEDICAL INFORMATION
C. Almanza	Betty McLain (Mother-In-Law) (312-422-8379)	A+	None	None
P. Alvey	Lisa Heeg 312-257-7761 Ext. 278 (Work) 312-366-7292 (Home)		None	Allergic to Penicillin, spiders and bees
S. Anderson	Fay Anderson (312) (820-8326)	A-	None	None
M. Arnold	Ray Arnold (Father) (312) 392-7787	A+	None	Hay Fever
J. Aryee	Sister & Brother-in-law 821-7119		Dr. Mahama Columbus Hosp. 266-8223	Allergic to Aspirin, and Coffee
G. Balanoff	Jennifer Rich (Wife) 572-2194 (W) 442-5958 (H)	B-	None	None
D. Banks	Mother 312-626-8396		None	None
R. Bayer	James Bayer (Father) (414) 739-3842		None	Contact Lens
G. Breen	Mark Breen (Brother) (312) 639-0065	O+	None	Wears Contact Lens
M. Broll	Marilyn Broll (Mother) (312) 456-2531	AB+	Gottlieb Hospital Melrose Park, IL	Allergic to silk sutures
C. Carlson	Jean Kerrigan (312) 537-1970		None	Hay Fever
J. Carman	Wife 312-922-9410		None	Allergic to cats hornests and wasps
B. Castillo	Carlos Castillo 581-6153			
M. Cerasuolo	Lisa Lostumbo (sister) (312) 795-6308		None	None
C. Chaberski	Chris Radecki (Sister)	O-	Dr. Couropmitre	Hay Fever, Contact Lens
S. Chan	Judy Tow (Aunt) (312) 326-2396		Mercy Hospital	None

ECOLOGY & ENVIRONMENT, INC.
REGION V EMERGENCY INFORMATION

Revised 10/8
PDM

NAME	EMERGENCY CONTACTS	BLOOD TYPE	DOCTOR/HOSPITAL PREFERENCES	SPECIAL MEDICAL INFORMATION
L.A. Cisneros	Joe Cisneros (Husband) (312) 665-6841	AB+	None	None
D. Clark	Don & Almira Clark (Parents) (309) 364-2590	O	None	Contact Lens
S. Clark	Mike Clark (Father) (813) 649-7214	O+	Evanston Hospital	None
T. Clyne	Brother 402-477-3697 (H) 402-475-4591 (W)	O	None	
G. Cobb	Bruce Cobb (Father) (217) 459-2749			Contact Lens
J. Corns	Joseph Corns (Father) (219) 924-1509		None	Wear Glasses
G. Donley	Lucy Thomas (Aunt) 312-821-5394		Cook County Hospital	Hay Fever
K. Dulik	Ed Dulik (312) 442-7198	A+	None	None
R. Ekstrom	Karen (Wife) Work 347-2428 Home 477-5382 Parents 620-0380	A+	None	Contact Lens
R. Ellison	John Ellison (Father) (716) 254-1131		None	Hay Fever; allergic to pollens, dust
M. Feltes	Roman Feltes (Father) (608) 323-3894		None	None
G. Ferguson	Virginia Ferguson (616) 381-1231	O+	Dr. Granieri N.M.H.	
C. Florczak	Linda Florczak (312) 354-0558		None	Wears Glasses
R. Galmore	Carolyn Galmore (Wife) (312) 938-4978 (Business) (312) 388-5553 (Home)		None	Wears Glasses
V. Gee	Barbara Gee (Mother) 312/687-7200 Ext. 2435 (Work)	AB-	None	None
J. Geiger	Parents 312-255-5689	A-	None	None
M. Geraminegad	Nasrin Haghighat (312) 947-4735 (W) (312) 960-9487 (H)	-	None	None
K. Getty	Mother 312-897-2108 Dale 312-420-1878			Sun Sensitivity; Low Blood Pressure; Allergic to sulfa drugs

ECOLOGY & ENVIRONMENT, INC.
REGION V EMERGENCY INFORMATION

Revised 10/87
PDM

NAME	EMERGENCY CONTACTS	BLOOD TYPE	DOCTOR/HOSPITAL PREFERENCES	SPECIAL MEDICAL INFORMATION
T. Gladan	Mrs. V. Gladan (Mother) (312) 675-3440		None	Allergic to Erythromycin
J. Goode	Diane (Wife) (312) 623-2754	O+	None	None
R. Graham	Parents 815-725-9342	A+	None	None
D. Gronke	Mary Hocuk (Mother) 227-0956			
L. Guzdziol	Ed Guzdziol (Father) (312) 326-2956	A+	None	Wears Contact Lens
M. Gzyra	Helen & Dan Garcia (Sister) (312) 376-3777		University of Illinois Medical Center	Allergic to dilantin Taking Phenobarbitol
B. Haugh	Mother 312-424-5937 (Kathleen) Father (312)-WA5-4300 Tim	B+	Christ Hospital Oak Lawn, IL	Allergic to Tetracylene and Erythromycin
M. Hein	Barbara Hein (219) 836-7910 (219) 836-5800 Ext. 2449		Dr. Mason Hammond, IN Hammond Clinic	Contact Lens
R. Hingtgen	Parents 815-747-3961 (H) 815-747-3173		None	Glasses, epilepsy, no spleen or gall bladder
R. Hix	Parents 312-897-7224 laude 312-969-6639	O		
G. Hochgraf	Eva Hochgraf (Wife) 312-955-2931	A+?	None	None
S. Hodge	Derek Hodge (312) 474-2442	O+	None	None
B. Jones	Jon Martin Jones (312) 289-7620 (W)	-	None	Allergic to Tetracycline
D. Kaiser	Martin Kaiser (Father) (312) 945-4977	B+	Dr. Symann (Deerfield)	Hay Fever
J. Kaiser	Mother (Carole Kaiser) 965-0875 (H) 965-3360 (Bus) Father (John) 864-1628 (H) (414) 273-4854 (Bus.)	O	Rush-Presb. St. Lukes or Cook County Hospital	None
Z. Kaufman	Lon Kaufman 996-5822		Dr. Humawiecki	Contact Lens/glasses
D. Klatt	Matt Oberst 887-6008 (W) 852-9685 (H)			Allergic to codine

ECOLOGY & ENVIRONMENT, INC.
REGION V EMERGENCY INFORMATION

Revised 10/8
PDM

NAME	EMERGENCY CONTACTS	BLOOD TYPE	DOCTOR/HOSPITAL PREFERENCES	SPECIAL MEDICAL INFORMATION
M. Kloker	Kevin Kloker (Brother) (312) 392-6014	B+	Dr. Shlyak St. Francis Hospital Evanston	Contact Lens, migraine headaches, allergic to molds
J. Kolb	John Kolb (Father) (219) 533-4466		None	None
T. Kouris	George Kouris (219) 838-0217	O+	None	Contact Lens
F. Kranik	Parents (412) 824-2711	B-	None	None
R. Kurzeja	Karen Kurzeja (Wife) (219) 923-4549		Dr. Jimenez Munster, Indiana	Hay Fever
S. LaFauce	Sandra LaFauce (Mother) (312) 279-6517		Dr. Cameron Villa Park, Illinois	Hearing Impairment
J. Lazinski	Lori Steele (Sister) (312) 934-8649		None	Allergic to penicillin, erythromycin, acromycin
R. Livingston	Mother 312-568-4855	AB+		
D. Lombardi	Yolanda Carlson (312) 354-4562	B+	None	Hay Fever, Dust Allergies
D. Lynch	Billene Smith 815-498-3169	O	None	None
K. Lyons	John Lyons (Father) (414) 386-2614		None	None
L. Mainquist	Tony Groble (Husband) 724-2478 (Home)	O-	Glenview Medical Assoc.	Wear Contacts
L. Martin	John Martin Martha Martin (in-laws) (312) 748-6487		Dr. Steiner Suburban Heights Medical Center	Wears Contact Lens
M. Martin	John Martin (Father) (312) 748-6487 (Home)	A-	None	Possible spring hay fever, hernia
T. Mayers	Joan Mayers (Mother) (312) 394-8683		None	None
T. McDermott	Parents 312-424-2544 Cynthia Jones 312-386-6045	O+		Contact Lens
K. McTigue	Patty Richman (Sister) (312) 371-2100 (Office) (312) 479-1175 (Home)	A-	Dr. Dan O'Reilly Palos Community Hos. Palos Heights, IL	None

ECOLOGY & ENVIRONMENT, INC.
REGION V EMERGENCY INFORMATION

Revised 10/87
PDM

NAME	EMERGENCY CONTACTS	BLOOD TYPE	DOCTOR/HOSPITAL PREFERENCES	SPECIAL MEDICAL INFORMATION
J. Mertes	James A. Mertes	AB-	None	Contact Lens, allergic to dusts/hay fever
M. Miller	Tone (Wife) Parents 813-932-3963	A-	Trauma Center	Contacts
P. Moss	Pat Hartman (Wife)	O+	Dr. Donald Cohen 312-679-4070	Allergic to iodine, bee stings, nuts, and ampicillin
M. Nesterenko	Barbara Nesterenko (Mother0 (312) 491-0122		None	None
K. Neswick	Russell Neswick (Father) 331-0130 Katherine Nesiewicz (grandmother) 841-5125	A+	None	None
J. Nordine	George J. Nordine (Father) (309) 828-0907 (H)	A+	None	Wears Contact Lens
D. Nova	Mother (312) 278-7136	O-	Dr. Charous (442-6500) MacNeil Hospital	Dr. Charous will give background
T. O'Brien	Mary O'Brien (Mother) (312) 238-1064	O-	None	Contact Lens
J. Osowarek	Mother (312) 545-0616			Possible allergic to Penicillin
T. Pachowicz	Wife (312) 692-2016 (Home) (312) 887-1420 (Work)		None	None
P. Petrella	Mr. John Petrella (216) 755-5689 471 Peter's Drive Campbell, Ohio 44415		None (Background infor. available from Dr. Nathan Belinky (1044 Wilson Ave. Campbell, Ohio 44506)	
K. Phillips	Wife (312) 231-7030	O+	Central Dupage Hospital	No allergies
D. Provenzale	Daniel and Bernadette Fleischer (Parents) (312) 469-8659 Donald Provenzale (Husband) (312) 531-4200		Good Samaritan Hospital Downers Grove, IL	None
J. Ratliffe	John Price 274-9705 (W) 975-1319 (H)	?	None	Crohn's Disease
M. J. Ripp	Parents 608-849-4138		None	Sulfa drug allergy

ECOLOGY & ENVIRONMENT, INC.
REGION V EMERGENCY INFORMATION

Revised 10/8
PDM

NAME	EMERGENCY CONTACTS	BLOOD TYPE	DOCTOR/HOSPITAL PREFERENCES	SPECIAL MEDICAL INFORMATION
C. Schlesinger	David & Flo Schlesinger (312) 985-5260 (Home) (312) 985-7997 (Home)		Univ. of IL Medical Center	Contact Lens; allergic to animal hair, pollen
M. Selway	Linda Selway (Wife) 312-328-3364 (Home)	A+	Weiss Memorial Hospital Dr. Keer	None
D. Sewall	Parents 321-485-5834 Joan (Wife) 312-246-9129 Work 312-454-1471	B+	None	
R. Short	William Short (Father) (312) 448-8498		None	None
K. Sims	Parents (312) 775-7825		None	Glasses
P. Sklar	Cheryl Olson-Sklar (312) 384-5035 (H)		None	Allergic to dust, Hay fever, seasonal asthma
T. Slavik	Pat Croy (Uncle) (312) 429-2769 Vicki Papez (Fiancee) (312) 981-0785	A+	None	Allergic to cats, dogs, dust; hay fever
P. Smith	Parents 715-634-8706 (Summer) 612-777-6160	A+	None	None
M.A. Spidalette	312-788-0917 (H) 312-726-2840 (W)		West Suburban Hos.	
A. Stumpf	Jim Stumpf (Husband) 439-0662 (Work) 380-7159 (Home)	O+	None	Wears Contact; allergic to bee stings
T. Sullivan	Mary Ann Sullivan (Wife) (312) 764-1607		None	Allergic to Penicillin
Tom Sullivan	Terrie Sullivan 869-3810	A-		
J. Swano	Julia Swano 382-2636		Dr. MacDougna Barrington Family Doc. 381-3000	Glasses
R. Van Someren	Cathleen 312-763-7335 (Wife)	AB+	Resurrection Hos. Park Ridge, IL	
K. Von Heimburg	Karl Von Heimburg (Father) (312) 359-3909	O-	None	Wear glasses; allergic to cats
D. Vrablic	Blanche Vrablic (Mother) (312) 865-0727			Contact Lens, Asthmatic, Allergies
K. Walker	Parents 312-466-4267 Father (Work) 312-859-5877	O-	None	Allergic to penicillin

ECOLOGY & ENVIRONMENT, INC.
REGION V EMERGENCY INFORMATION

Revised 10/8
PDM

NAME	EMERGENCY CONTACTS	BLOOD TYPE	DOCTOR/HOSPITAL PREFERENCES	SPECIAL MEDICAL INFORMATION
K. Webb	Judy Shank (312) 598-2497	O+	None	Poison Ivy
B. Wiley	William Wiley, Sr. Father		Dr. Lobue St. James Hos. Chicago Heights, IL 756-1000	Allergic to darvon and codeine
B. Wolff	Gail Wolff (Mother) (312) 835-3357		Highland Park Hos. Dr. Hu Allen	

Before calling emergency numbers attempt to contact: Paul Moss (312) 541-6635

PROCEDURES TO FOLLOW WHEN INVOLVED IN A VEHICULAR ACCIDENT ON COMPANY TIME

1. Determine if there are any injuries. If so, call for police and medical assistance immediately.

2. Then call the office as soon as possible and ask to speak to the following people in order they appear here: Mary Ann Spidalette, Kathy Getty, Rene' Van Someren, Jerry Oskvarek, Tim McDermott, Mary Jane Ripp or Mike Miller. If there are injuries to any E & E personnel or if there are serious injuries to the other party, try to reach any of these people at home. Try to have as much information as possible about any injuries sustained.

3. If there are no injuries, call the police and then call the office as soon as possible.

You will be asked to provide the following information when you call in to the office. Obtain as much information as possible before calling.

1. Name(s) of the owner(s) of the other vehicle(s) involved and any occupants.

2. Insurance carrier(s) of the other party(ies).

3. License plate and vehicle registration numbers of the other vehicle(s) involved. In addition, note the make, model and year of the car(s).

4. Name(s) of our driver and any occupants.

5. License plate and serial numbers of our vehicle as well as the make, model and year. If our vehicle is a rental car, also state the rental agency and location.

6. Location and time of the accident.

7. Description of the accident itself. Include circumstances such as the weather and physical surroundings. Upon return to the office, you will be asked to provide a sketch of the accident so you should rough draft the sketch at the scene.

8. Obtain at least one copy of the police report. This will be submitted to Buffalo with a memo and the sketch.

9. Description of damage done to our vehicle and any other involved vehicles. If you have a camera, take pictures of the damage done and any other informative or contributing conditions.

10. If the vehicle is ours and not a rental, you will need to obtain 3 estimates for repair. Depending on the degree of damage, this may be done in the field or back in Chicago.

When completing the police report, you may need the following information if you were driving one of our vehicles:

1. Our vehicles are owned by the U.S. Government; Environmental Protection Agency; c/o Ecology and Environment, Inc., Hans Neumaier, Director of Administrative Services.

2. Our insurance is with Fireman's Fund, c/o E & E, Hans Neumaier, Director of Administrative Services.

3. Buffalo's address is:

195 Holtz
Buffalo, NY 14225

91Q:1X

SITE DOSIMETER LOG

TDD# F05-8802-099 SITE NAME SCA Services Barton Landfill

SITE SAFETY OFFICER Matt Arnold WEEK OF April 11-15

NAME AND DOSIM. #	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
Gary Cobb							
Matt Arnold							
Catherine Neswick							
Bob Kurzeja							
Rob Hingtgen							
Melanie Desterenko							

To the nearest half-hour, record time spent downrange as "S" (e.g., S: 2.5 hrs), time spent in active PDS operation as "P", and any time spent downrange in rescue activity as "R".

ECOLOGY AND ENVIRONMENT, INC.
CHICAGO
FIELD EQUIPMENT CHECKLIST

TEAM LEADER: G. Cobb
PAN: FIL0599SA
DATE OF DEPARTURE: 4/11/88
EXPECTED DATE OF RETURN: 4/15/88

A) Safety Instruments
- ___ Photovac TIP ID#_____
- ___ Monitox (HCN) ID#_____
- 1 HNU, (10.2) OR 11 LAMP ID# 337457
- 1 OVA (organic vapor analyzer ID# 419540
- 1 Explosimeter/O2 meter ID# 419491
- ___ Drager pump, specify tube type (HCN, Natural Gas, or other) ID#___
- 1 Rad-Mini ID# A19555
- ___ Radiation, other: ___ ID#_____
- 1 Monitox (HCN) ID# A65983
- ___ Heat stress monitor ID#_____
- ___ Noise equipment ID#_____
- ___ Dust monitor-MDA system ID#_____

O2 - 419462

B) First Aid Equipment (specify quantity)
- 1 First aid kit ✓
- ___ Oxygen Inhaler
- 1 Eyewash bottle

C) Miscellaneous Safety Equipment (specify quantity)
- 6 Hard hat
- 6 Safety glasses
- ___ Life vests
- ___ Ice vests
- ___ Hearing protection

D) Respiratory Equipment (specify quantity)
- ___ Racal P.A.P.R. ID#_____
- 2 Robert Shaw escape mask ID#_____
- 1 MSA SCBA ID#_____
- 1 Extra air cylinders ID#_____

E) Respiratory Cartridges (specify quantity)
- 1 box GMC-H
- ___ GM-P
- ___ AP-3 (for Racal)
- ___ Other

F) Protective Clothing

1. Suits (specify quantity)
- 15 Saranex, Size: M__, L X, XL X, XXL__
- ___ Splash apron
- ___ Butyl acid suits
- ___ Fully encapsulated suits
- 30 Tyvek, size: M__, L ✓, XL__, XXL__

2. Gloves (specify quantity)
- 1 box Latex disposable, Size: M__, L ✓
- 10 Butyl Rubber, Size: M__, L ✓
- ___ Nitrile, Size: M__, L__
- 5 Neoprene, Size: M__, L__
- ___ Viton, Size: M__, L__
- 10 Glove liners, Size: M__, L__

3. Boots (specify quantity)
- ___ Neoprene, Size:_____
- 30 Latex disposable, Size: L ✓, XL__
- (Acid) 5 Winter boots, ___ Size:___
- ___ Other: ___ Size___

G) Vehicles
- ✓ Suburban ID#_____
- ✓ Cargo Van ID#_____
- ___ Step Van ID#_____

H) Sample Bottles (specify quantity)
- ___ 80 oz. amber glass
- ___ 1 L. amber glass
- ___ 40 mL. vial
- ___ 1 L. plastic
- ___ 8 oz. glass
- ___ 120 mL. glass
- ___ Dioxin Sample Kit

I) Preservatives (specify quantity)
- ___ HN03
- ___ NaOH
- ___ Other: _____

J) Decon Supplies (specify quantity)
- 2 Wash tubs
- 2 Buckets
- 2 Scrub brushes
- ___ Solvent
- 1 Detergent (Alconox)
- 2 qts MSA Sanitizing Solution

K) Field Equipment (specify quantity)
- 1 Conductivity meter ID# 190610
- 1 PH meter ID# 611975
- 1 Thermometer ID#_____
- 1 Masterflex pump and filter apparatus ID# 611840
- 1 Camera ID# 190688, 419479
- ___ Compass ID#_____
- 1 Water-level indicator ID# 465581
- 1 Split-spoon samplers ID#_____
- 4 Bailers ID#_____ 2 PVC bailers ✓
- ___ Magnetometer ID#_____
- ___ Resistivity meter ID#_____
- 1 Robair pump system ID#_____
- ___ PVC hand pump ID#_____
- ___ Well point sampler ID#_____
- ___ Air sampling pump kits ID#___
- ___ Buck calibrator ID#_____
- ___ Meteorological station ID#___
- ___ Level/tripod and rod ID#_____
- ___ Pitcher pump ID#_____
- ___ Photovac ID#_____
- ___ Thermal desorber IS#_____
- 1 Other: Hand ID#_____

(P.D. Moss, 12/87)

ECOLOGY AND ENVIRONMENT, INC.
FIELD INVESTIGATION TEAM
ON-SITE SAFETY MEETING

Project SCA Services Barton Landfill

Date _____ Time _____ Job No. FIL0599SA

Address _____

Specific Location _____

Type of Work _____

SAFETY TOPICS PRESENTED

Protective Clothing/Equipment _____

Chemical Hazards _____

Physical Hazards _____

Emergency Procedures _____

Hospital/Clinic _____ Phone _____

Special Equipment _____

Other _____

ECOLOGY AND ENVIRONMENT, INC.
FIELD INVESTIGATION TEAM
ON-SITE SAFETY MEETING

ATTENDEES

Name (Printed)	Signature
Gary Cobb	
Matt Arnold	
Catherine Neswick	
Bob Kurzeja	
Rob Hingtgen	
Melanie Nesterenko	

Meeting Conducted By:

Site Safety Officer:
Matt Arnold

Team Leader:
Gary Cobb

ON-SITE SAFETY LOG

ECOLOGY AND ENVIRONMENT, INC.
CHICAGO

A. ON-SITE MONITORING

EQUIPMENT USED	BACKGROUND READING IN BREATHING ZONE	CALIBRATED AT	ON-SITE READING IN BREATHING ZONE
1. OVA/HNu w/10.2ev probe + calib. gas			
2. Monitox			
3. Rad-Mini			
4. Explosimeter + calib gas			
5. O_2 Meter			

B. PROTECTIVE CLOTHING WORN: _____

C. SITE NAME: SCA Services Barton Ldfl. PAN/JOB NUMBER: FIL05998SA

DATE: _____

WEATHER CONDITIONS: _____

NAMES OF ATTENDEES AT SITE: _____

D. COMMENTS ON MONITORING OR PROTECTIVE CLOTHING: _____

	NAME	SIGNATURE
TEAM LEADER:	Gary Cobb	
SITE SAFETY OFFICER:	Matt Arnold	

(P.D. Moss 12/87)